Technology Contracting for Transit Projects

DETAILS

52 pages | 8.5 x 11 | PAPERBACK
ISBN 978-0-309-46433-8 | DOI 10.17226/24869

CONTRIBUTORS

Larry W. Thomas; Legal Research Programs; Transit Cooperative Research Program Legal Program; Transit Cooperative Research Program; Transportation Research Board; National Academies of Sciences, Engineering, and Medicine

September 2017

TRANSIT COOPERATIVE RESEARCH PROGRAM
Sponsored by the Federal Transit Administration

Responsible Senior Program Officer: Gwen Chisholm Smith

Legal Research Digest 51

TECHNOLOGY CONTRACTING FOR TRANSIT PROJECTS

This report was prepared under TCRP Project J-05, "Legal Aspects of Transit and Intermodal Transportation Programs," for which the Transportation Research Board is the agency coordinating the research. The report was prepared under Topic 16-04 by Larry W. Thomas, The Thomas Law Firm, Washtington, DC. James B. McDaniel, TRB Counsel for Legal Research Projects, was the principal investigator and content editor.

The Problem and Its Solution

The nation's 6,000 plus transit agencies need to have access to a program that can provide authoritatively researched, specific, limited-scope studies of legal issues and problems having national significance and application to their business. Some transit programs involve legal problems and issues that are not shared with other modes; as, for example, compliance with transit-equipment and operations guidelines, FTA financing initiatives, private-sector programs, and labor or environmental standards relating to transit operations. Also, much of the information that is needed by transit attorneys to address legal concerns is scattered and fragmented. Consequently, it would be helpful to the transit lawyer to have well-resourced and well-documented reports on specific legal topics available to the transit legal community.

The *Legal Research Digests* (LRDs) are developed to assist transit attorneys in dealing with the myriad of initiatives and problems associated with transit start-up and operations, as well as with day-to-day legal work. The LRDs address such issues as eminent domain, civil rights, constitutional rights, contracting, environmental concerns, labor, procurement, risk management, security, tort liability, and zoning. The transit legal research, when conducted through the TRB's legal studies process, either collects primary data that generally are not available elsewhere or performs analysis of existing literature.

Foreword

Transit agencies face contracting issues when procuring hardware and software systems and licenses. Many of these issues affect transit agencies in the same way as private companies, but as public and quasi-public entities, transit agencies face procurement requirements that differ significantly from those facing private sector companies.

After analyzing current applicable and pertinent federal and state laws, this digest examines issues that transit attorneys should be aware of when drafting technology contracts. It addresses how provisions differ depending on the nature of the contract, the type of technology being procured, and whether the system is controlled internally or externally by the agency. Specific focus is given to cloud computing as an alternative delivery mode, and indemnification.

This digest also discusses federal, state, and local industry standards regarding liability and warranties, and the contract language that should be used to protect against data breaches, including inadvertent release of personal information.

A survey was conducted to determine best practices, and the author included a compilation of sample contract provisions that would be helpful to a transit attorney drafting a stand-alone technology contract or technology provisions in a vehicle or construction contract.

This digest should prove useful to transit executives and attorneys and students, as well as suppliers of relevant technology-based products.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
TRB
TRANSPORTATION RESEARCH BOARD

CONTENTS

TECHNOLOGY CONTRACTING FOR TRANSIT PROJECTS

By Larry W. Thomas, J.D., Ph.D., The Thomas Law Firm

I. INTRODUCTION

This report discusses technology contracting for the kinds of technology that transit agencies typically procure. The Federal Acquisition Regulation (FAR) definition of information technology appears to be an apt description of the scope of the topic of the report. The term *information technology* means "any equipment, or interconnected system(s) or subsystem(s) of equipment, that is used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by [an] agency."[1] The term includes computers, peripheral equipment, software, and related resources.

Part II of this report discusses technology agreements; types of software; alternative methods of project delivery, such as design–build; the centralization in some states of technology procurements; maintenance and support and service level agreements; the acquisition of technology through non-technology procurements; and escrow and nondisclosure and confidentiality agreements.

Parts III and IV deal primarily with state laws that apply to technology agreements. Part III discusses states' statutes that apply to procurements by state entities or political subdivisions or other units of local government, statutes that are specific to procurements of technology, and statutes that are specific to procurements by transit agencies. Part IV explains that, to the extent not addressed by state or local procurement laws or by a transit agency's technology agreement, any disputes arising under an agreement are likely to be decided under state law, including state law on contracts and torts, and/or Article 2 of the Uniform Commercial Code (UCC). The report also discusses the Uniform Computer Information Transactions Act (UCITA), which only the states of Maryland and Virginia have enacted.

Parts V and VI discuss the drafting of technology agreements. Part V discusses issues and clauses that a transit agency may want to consider when drafting such agreements. Appendix D to the report is a detailed checklist of clauses to consider with citations to specific provisions of technology agreements that many transit agencies provided for the report. Part VI analyzes technology contracting and cloud computing as an alternative delivery mode for transit agencies, factors that transit agencies may want to investigate when considering cloud computing, and clauses that agencies may want to include in an agreement for cloud computing.

Parts VII and VIII discuss issues of special concern to transit agencies in technology contracting. Part VII deals specifically with technology providers' attempts to limit their liability, transit agencies' need for indemnification for claims arising out of technology they procure, and warranties by a contractor, designer, developer, licensor, or vendor of technology that transit agencies procure. Part VIII discusses the importance to transit agencies of contractual protection for claims arising out of a data-breach or privacy violations caused or not prevented by technology that an agency procured.

Parts IX through XI focus on three kinds of intellectual property (IP) that are implicated by transit agencies' procurement and use of technology: trade secrets, copyrights, and patents. Part IX analyzes federal and state laws applicable to the protection of trade secrets, including the federal Defend Trade Secrets Act of 2016 (DTSA) and the Uniform Trade Secrets Act (UTSA). Because digital IP, such as software, is copyrightable, part X concerns transit agencies' rights under the federal copyright laws. Whether a state or local agency may copyright a work, however, is a matter of state law. Part X also discusses the federal government's rights in data resulting from experimental, developmental, or research work funded in whole or in part by the federal government. Part XI discusses the protection of a transit agency's rights to its IP under the patent laws. Depending on the circumstances, either computer hardware or software may be patentable. Part XI reviews the patent rights of the federal

[1] Federal Acquisition Regulation, subpart 2.101 (Definitions) (2016), https://www.acquisition.gov/?q=browsefar (last accessed Feb. 24, 2017). *See also*, American Public Transportation Association, APTA Procurement Technology Standards Workgroup, APTA PS-TP-WP-001-11, at 1 (2011), hereinafter referred to as "APTA Report," http://www.apta.com/resources/standards/Documents/APTA-PS-TP-WP-001-11.pdf (last accessed Feb. 24, 2017).

government and state and local agencies, including the federal government's rights in patents for inventions and discoveries that are federally funded. Also discussed are the Federal Transit Administration's (FTA's) rights in experimental, developmental, or research work that the FTA funds.

Part XII analyzes whether a government transit agency's data are subject to a Freedom of Information Act (FOIA) or equivalent state open records law, and if so, whether a transit agency may require a requester to sign an end-user agreement before disclosing data to a requester.

Parts XIII and XIV discuss, respectively, procurement laws that some states have enacted, as well as FTA policies, that permit transit agencies to negotiate the terms of a technology procurement with contractors, designers, developers, licensors, and vendors to obtain the best price or value for technology and best practices for transit agencies to consider adopting.

A survey of transit agencies for the report obtained information on their technology projects and copies of their agreements. Of fifty-two transit agencies responding to the survey, forty-three agencies reported that within the past five years they had been involved in the design, development, and/or procurement of technology that their agency regards as particularly significant because of a project's cost, scope, complexity, and/or objectives.[2] Nine agencies said that they had not had any projects of significance in the past five years.[3] The agencies' responses to the survey are discussed throughout the report and summarized in Appendix C.

Appendix A is a list of the transit agencies that responded to the survey. Appendix B is a copy of the survey. Appendix C is a summary of the transit agencies' responses to the survey, including a description of the technology projects that the agencies designed, developed, and/or procured in the past five years. Appendix D is a checklist of clauses for technology agreements. Appendix E is a sample escrow agreement. Appendix F is a sample nondisclosure and confidentiality agreement. Appendix G is a compendium of technology agreements and other documents that transit agencies furnished for the report.

II. TECHNOLOGY AGREEMENTS, TYPES OF SOFTWARE, METHODS OF PROJECT DELIVERY, AND RELATED ISSUES

A. Comparison of Technology Contracting to Other Public Contracting

Other government contracts, particularly public construction contracts, have influenced technology contracting. In general, because the same rules and methods of procurement apply, government acquisitions of technology are similar to the procurement of other types of goods and services.[4] In fact, "[t]he complexity of a construction contract is matched if not exceeded by the complexity" of an information technology (IT) contract.[5] One difference, however, is that construction contracts usually are based on technical specifications rather than on performance-based specifications,[6] whereas technology contracting may involve a mix of performance-based, functional, and/or technical specifications.[7]

B. Licenses and Other Forms of Agreements

As discussed in parts IX, X, and XI, trade secrets, copyright, and patent laws combine to protect an owner's IP rights in technology, including software and related systems, rights that may be conveyed by licenses and assignments.[8] A license is a contract whereby a licensor grants permission to a licensee to use IP on an exclusive or nonexclusive basis for the term of the license for the use or uses stated in the license. A license enables a licensor to maintain title to its property, whereas an assignment "equates to a sale."[9] A license is more flexible than an assignment or a sale because a licensor is able to "control the permitted locations, duration of use, number of users, and even the permitted uses of the software."[10]

Licenses may grant certain IP rights or may grant "all the IP rights necessary…to create and market a product that complies with a technical standard of specification."[11] The type of technology service or

[2] *See* Appendix C, transit agencies' responses to question 2.

[3] *See id.*

[4] Katherine M. John, *Information Technology Procurement in the United States and Canada: Reflecting on the Past with an Eye towards the Future*, 48 PROCUREMENT LAW. 4, 9 (2012–2013).

[5] William W. Warren, Jr. & Kara P. Scarboro, *Standard Terms and Conditions in Commonwealth Contracts, Symposium Issue: Pennsylvania State and Local Government Contracting--Practitioner's Guide to Current Issues*, 85 PA BAR ASSN. QUARTERLY 141, 143 (2014), hereinafter referred to as "Warren & Scarboro."

[6] *Id.*

[7] *Id.*

[8] Ward Classen, *A Practical Guide to Software Licensing for Licensees and Licensors* 19 (ABA 2d ed. 2007), hereinafter referred to as "Classen 2d ed." *See also*, Stephen J. Davidson, *Avoiding Pitfalls and Allocating Risk in Major Software Development and Acquisition Contracts*, 14 COMPUTER LAWYER 12 (May 1997).

[9] Classen 2d ed., *supra* note 8, at 11, 19.

[10] Michael L. Rustad, *The Exportability of Principles of Software: Lost in Translation?*, 2 HASTINGS SCI. & TECH. L. J. 25, 31 (2009).

[11] World Intellectual Property Organization, IP Assets Management Series, *Successful Technology Licensing*, at 5–6 (2015), (last accessed Feb. 24, 2017) http://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf.

system being acquired and the nature of an agreement affect the terms and conditions of a contract.[12] Although part V and Appendix D provide a checklist of clauses to consider when drafting a technology agreement, two important provisions of a license are the license-grant clause, which describes specifically a licensee's rights to use the licensed technology, and the royalties clause, which describes the payments that are due by a licensee to a licensor.[13]

C. Types of Software Used by Transit Agencies

1. Commercial Off-the-Shelf Software

As for the types of technology that transit agencies may procure, one type of software is commercial off-the-shelf (COTS) software. COTS is "'a standardized package or platform regularly used for the deployment of specific applications' that 'includes proprietary products that have already been developed and/or are owned by the Contractor or by third parties.'"[14] Twenty-seven transit agencies responding to the survey said that for some or all of their projects they specified the use of off-the-shelf software.[15]

2. Open Source Software

Open source software, a "major factor in the computer industry and in informational technology in general,"[16] may be "embedded in commercial software products and devices…."[17] Although Linux may be the best known open source program, there are many other programs available for open source licensing, including from "mainstream software companies," such as IBM, that have released their own version of open source products.[18] Twelve transit agencies said that they had specified open source software for some technology projects.[19]

Open source software is not a technology but "an increasingly popular licensing and distribution method,"[20] *i.e.,* a computer program that is available under an open source license.[21]

> Developers of open-source software distribute source code with the software under a generally applicable license. The license provides conditional permission to use copyright-protected material. [T]he license…require[s], as a condition of use, that recipients redistributing the software also redistribute the source code. More importantly, if the recipients modify the source code, they must make the modifications available to others if they redistribute the software. Finally, recipients who redistribute (with or without modifications) must impose the same terms on their licensees.[22]

Open source licensing is not about licensing source code but involves the licensing of "binary computer programs when the source code is available."[23] Although source code is "the key to maintaining and improving any software program,"[24] most users of open source-licensed products do not use the source code but "simply run and use the binary versions of the program."[25] Although open source software is protected by the copyright laws, "the source code for such software is widely available and developers are free to fix bugs, add new modules, and otherwise revise" the software.[26] (In contrast, under the proprietary model for owning and licensing software, a vendor has sole control of the source code.[27]) Some licensors may license proprietary source code when "the ability to modify and customize the source code is important to the licensee."[28] In such instances, licensees have a contractual obligation "to keep the source code secret and to distribute only binary derivatives of the source code."[29]

Although there are advantages and disadvantages to using open source software, one disadvantage is that "[m]ost open source products come without

---

[12] Classen 2d ed., *supra* note 8, at 1

[13] Joel W. Mohrman, *Capitalizing on Intellectual Property: An Introduction to Licensing*, 38 The Brief 36, 42–44 (2009).

[14] Lockheed Martin Transportation Security Solutions v. MTA Capital Construction Company, Case No. 09, Civ. 4077 & 09, Civ. 4077, 2014 U.S. Dist. LEXIS 131395, at *1, 12 (S.D.N.Y. Sept. 16, 2014) (citation omitted).

[15] *See* Appendix C, transit agencies' responses to question 5(a). Twelve agencies said that they had not specified the use of off-the-shelf software. *Id.* Three agencies did not respond to the question. *Id.*

[16] Gene K. Landy & Amy J. Mastrobattista, *The IT/Digital Legal Companion: A Comprehensive Business Guide to Software, IT, Internet, Media and IP Law* 238 (2008), hereinafter referred to as "Landy & Mastrobattista."

[17] *Id.*

[18] *Id.*

[19] *See* Appendix C, transit agencies' responses to question 5(b). Twenty-five agencies reported that they had not. *Id.*

[20] Landy & Mastrobattista, *supra* note 16, at 239.

[21] *Id.*

[22] Greg R. Vetter, *The Collaborative Integrity of Open-Source Software*, 2004 Utah L. Rev. 563, 570–71 (2004), hereinafter referred to as "Vetter." The writer explains further that "[i]n essence, under this approach, open-source programmers govern how the 'work' (the software) will be viewed by future users and developers. It must be viewable at least as source code." *Id.* at 571.

[23] Landy & Mastrobattista, *supra* note 16, at 239.

[24] *Id.*

[25] *Id.*

[26] David W. Tollen, *The Tech Contracts Handbook: Software Licenses and Technology Services Agreements for Lawyers and Businesspeople* 179 (ABA 2010), hereinafter referred to as "Tollen."

[27] Landy & Mastrobattista, *supra* note 16, at 240.

[28] *Id.*

[29] *Id.*

intellectual property indemnification."[30] There is a risk with open source software that licensees will be left without a remedy if there is a claim for infringement of a copyright or patent.[31] A claim could arise because a licensee likely does not know the "provenance" of any software that it obtains and cannot be certain that a contributor had the right under the copyright or patent laws to make a contribution.[32] As one writer cautions, it is important to know open source products and licenses before incorporating open source software in a project.[33] It may be noted that, because the intention is that open source software will be shared rather than kept secret, trade secret laws, discussed in part IX, do not apply to open source software.[34]

In responding to the survey, the Central Florida Regional Transportation Authority (LYNX) reported that the scope of one of its projects was that the system would use open source software and "aggregate existing technologies as much as possible."[35] The Tri-County Metropolitan Transportation District of Oregon (TriMet) also has specified open source software. One article states that TriMet increasingly has used open source software and off-the-shelf products.[36]

3. Custom-Built or Customized Software and/or Systems

Transit agencies may acquire custom-built or customized software or systems for their use. Twenty-three agencies reported that they had specified custom-built or customized software for a technology project.[37]

Some transit agencies may be avoiding the use of customized software. Vermont's public transit agencies used custom software for a rider intake and management system for demand response services;[38] however, when ridership increased and the custom software failed to meet the agencies' needs, the agencies changed to RouteMatch to meet transit industry standards.[39] In a case involving the Metropolitan Transportation Authority (MTA) in New York, there was testimony that the MTA generally does not prefer customized applications because support and maintenance always become an issue with proprietary software.[40]

4. Systems Using Multiple Types of Software

Technology projects may specify the use of more than one type of software. As noted, the Central Florida Regional Transportation Authority (LYNX) said that one of its projects was designed to use open source software and aggregate existing technologies.[41] The Greater Cleveland Regional Transit Authority reported that it used off-the-shelf software for six of its seven projects (*e.g.*, phone system replacement, DriveCam, transit police radio replacement, enterprise report writer, and mobile ticketing), used both off-the-shelf and custom or customized software for its operator bid dispatch project, and used custom or customized software for its public announcement system.[42]

D. Design–Build Procurement

Some state statutes encourage the use of design–build contracting, including for technology procurements.[43] Under the traditional design–bid–build method of procurement "the public-sector sponsor retains the design risk; the design and construction work is procured sequentially; and the public sector retains responsibility for operating and maintaining

[30] *Id.* at 243.

[31] *Id.* at 254.

[32] *Id.* at 253.

[33] *Id.* at 256 (emphasis in original).

[34] Vetter, *supra* note 22, at 588.

[35] *See* Appendix C, Central Florida Regional Transportation Authority's (LYNX) response to question 5(b).

[36] Andy Opsahl, *Open Source Software Helps an Oregon Transportation Department for GIS, Website Development*, Government Technology Magazine (March 15, 2011), http://www.govtech.com/e-government/Open-Source-Software-Oregon-Transportation.html (last accessed Feb. 24, 2017).

[37] *See* Appendix C, transit agencies' responses to question 5(c). Eighteen agencies said that they had not. *Id.* Two agencies did not respond to the question. *Id.*

[38] *Vermont's Urban and Rural Transit Agencies to Use RouteMatch Software's Intelligent Transportation Systems (ITS) Platform*, Routematch (Sept. 9, 2015), hereinafter referred to as "Reuters," (last accessed March 13, 2017) http://www.marketwired.com/press-release/vermonts-urban-rural-transit-agencies-use-routematch-softwares-intelligent-transportation-2054052.htm.

[39] *Id.* RouteMatch Software "brings innovative passenger transportation technologies that help more than 600 public transit agencies transform rider experiences and manage operational costs. …[Its] technologies span… scheduling, computer aided dispatching (CAD), routing, analytics, automated vehicle location, and reporting on the 'back office' to user friendly automated fare collection, mobile apps for 'where's my bus?' information, and other multi-modal trip planning tools on the 'rider side.'" RouteMatch, (last accessed Feb. 24, 2017), http://www.routematch.com/.

[40] Lockheed Martin Transportation Security Solutions v. MTA Capital Construction Company, Case No. 09 Civ. 4077 & 09 Civ. 6083 (PGG), 2014 U.S. Dist. LEXIS 131395, at *1, 13 (S.D.N.Y. 2014).

[41] *See* Appendix C, Central Florida Regional Transportation Authority's (LYNX) response to question 5(a).

[42] *See* Appendix C, Greater Cleveland Regional Transit Authority's response to question 5(b).

[43] *See, e.g.*, Cal. Pub. Contract Code § 22162(a) (2016) and N.C. Gen. Stat. § 143-129.8(a) (2016) (stating that because of the "complex and innovative nature of information technology" a contract with "a single point of responsibility" may be used in addition to or instead of other procedures available under North Carolina law).

the infrastructure."[44] Twenty-three agencies reported using a traditional design–bid–build contract for their technology project.[45]

However, a transit agency may want to use an alternative method of contracting, such as design–build, to transfer the responsibility from the transit agency to the contractor for the design of any software and related systems for a project. Nine transit agencies responding to the survey said that they had used design–build or another form of project delivery for their technology projects.[46]

It has been argued that technology contracting is "analogous" to design–build construction because for many or most IT projects "a single entity develops the business requirements with the …agency and then implements the project…."[47] In design–build contracting, "the design and construction procurements are combined into one fixed-fee contract with a 'single point of contact' that is responsible for both design and construction."[48] The design–build method is said to encourage design creativity, involve the contractor earlier in the process, and shorten the time for project delivery.[49]

One article states that in 2005 the Metropolitan Atlanta Rapid Transit Authority (MARTA) used design–build contracting to acquire technology for its closed-circuit television (CCTV) surveillance system.[50] MARTA reportedly saved money because it was able "to take advantage of the technological advancements that occurred between the initial proposal submission and the commencement of the project's design phase."[51]

[44] Edward Fishman, Major Legal Issues for Highway Public-Private Partnerships, Legal Research Digest No. 51, National Cooperative Highway Research Program, Transportation Research Board of the National Academies of Science, Engineering and Medicine, Washington, D.C., 2009, p. 5, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_lrd_51.pdf (last accessed Feb. 24, 2017).

[45] *See* Appendix C, transit agencies' responses to question 6(a). Fifteen agencies said that they had not used design-build, and four did not respond to the question. *Id.*

[46] *See* Appendix C, transit agencies' responses to question 6(b). Twenty-four agencies said that they had not. *Id.*

[47] Warren & Scarboro, *supra* note 5, at 143.

[48] *Id.*

[49] Jason H. Peterson, *Note: The Big Dig Disaster: Was Design-Build the Answer?*, 40 Suffolk U. L. Rev. 909, 916 (2007).

[50] Robert M. Bertuca, *Design-Build Approach Delivers Enhanced Security for Atlanta's Mass Transit System, Decreased Risk for Metropolitan Atlanta Rapid Transit Authority*, Design-Build Dateline, 1 (2007), (last accessed Feb. 24, 2017) http://www.mcdean.com/services/security/Sep2007_Bertuca_web.pdf.

[51] *Id.* at 2.

E. Maintenance and Support and Service Level Agreements

Thirty-six transit agencies stated that they had a maintenance and support agreement for technology projects.[52] Twenty-six transit agencies said that they had a service level agreement for technology projects.[53] Several agencies provided details on their maintenance and support and/or service level agreements.[54]

F. Acquisition of Technology Through Non-Technology Contracts

Transit agencies may acquire technology, and thus need updates, maintenance, and support, through what are essentially non-technology contracts for construction projects or the purchase or lease of "advanced technology" vehicles. For example, the Department of Energy's Advanced Vehicle Testing Activity (AVTA) reportedly has begun a full evaluation of the New York City Transit's new fleet of 125 Orion VII diesel hybrid electric buses featuring BAE System's HybriDrive™ propulsion system that reduces toxic emissions and increases fuel economy.[55] Other transit systems are considering alternative vehicle technology.[56]

G. Escrow Agreements

After the commencement of a technology project, a developer may be unable (or unwilling) to support its software, cease to do business, or be purchased by another entity.[57] Consequently, transit agencies may want to require a contractor, designer, developer, licensor, or vendor (*developer* hereafter) of software to sign an escrow agreement. When there is an

[52] *See* Appendix C, transit agencies' responses to question 7(a). Three transit agencies said that they did not. *Id.* Three agencies did not respond to the question. *Id.*

[53] *See* Appendix C, transit agencies' responses to question 7(b). Eleven agencies said that they did not. *Id.* Five agencies did not respond to the question. *Id.*

[54] *See* Appendix C, transit agencies' responses to question 7.

[55] Leslie Eudy, U.S. Dep't of Energy, *Advanced Technology Vehicles [AVTA] in Service*, "MTA New York City Transit" (March 2003), http://www.nrel.gov/docs/fy03osti/33397.pdf (last accessed Feb. 24, 2017). AVTA "bridge[s] the gap between R&D of advanced vehicle technologies and commercial availability." *Id.*

[56] *See* Downtown/Riverfront Streetcar Project, Vehicle Technology Survey Technical Memorandum, (2013), http://www.riverfrontstreetcar.com/wp-content/uploads/2014/03/DT-Riverfront-Streetcar-Vehicle-Tech-Survey-Memo-Dec-2013.pdf (last accessed Feb. 24, 2017).

[57] Virginia Information Technologies Agency, *Guidance on Source Code Escrow and Escrow Agreements* (undated), 1, hereinafter referred to as "VITA," https://www.vita.virginia.gov/uploadedfiles/VITA_Main_Public/SCM/Templates/guidance%20on%20source%20code%20escrow.pdf (last accessed Feb. 24, 2017).

escrow agreement, a developer deposits certain proprietary materials, such as source code, that would be required if the developer fails to support and maintain its software.[58] A sample escrow agreement is included as Appendix E.[59] The use of an escrow does not apply to off-the-shelf software.[60]

An escrow agreement "require[s] the developer of a software product to place proprietary materials necessary to maintain the product in escrow with a neutral party," the escrow agent.[61] If a developer fails to support its software, the escrow agent releases the source code and/or other proprietary materials to the end user.[62] Unfortunately, licensees may not give the attention to escrow agents and agreements that escrows require. First, an escrow agreement should be executed prior to a license or other agreement for software.[63] Second, the escrow agreement should state the date by which the developer must deposit the proprietary materials in escrow, with the escrow agent mutually selected by the parties.[64] Third, before using an escrow, a transit agency should be involved and exercise due diligence in the selection of an escrow agent, rather than merely use an agent selected by a developer, such as a developer's attorney. Fourth, a transit agency considering the use of an escrow may want to develop a standard list of materials that technology developers must deposit in escrow.[65]

There are other issues for transit agencies to address, such as an escrow agent's facilities for the storage of a developer's proprietary materials (*e.g.*, for the protection of magnetic media), periodic audits of an escrow agent's facility, and a procedure for verifying that a developer provides an escrow agent with updates or upgrades to source code.[66] Furthermore, a licensee may want an escrow agreement to include a "quick release" provision so that a developer has no power to prevent a release of escrow materials but has legal recourse to attempt to reverse a release.[67]

[58] VITA, *supra* note 57, at 1.

[59] *Id.*

[60] *Id.*

[61] Richard Sheffield, *The Keys to a Reliable Escrow Agreement*, National Institute of Standards and Technology, 1 (1996), http://csrc.nist.gov/nissc/1996/papers/NISSC96/paper001/article.pdf (last accessed Feb. 24, 2017).

[62] *Id.*

[63] *Id.* at 2.

[64] *Id.*

[65] *Id.* at 3. *See id.* for partial list of recommended materials.

[66] *Id.* at 4.

[67] *Id.* at 6.

H. Nondisclosure and Confidentiality Agreements

Contractors, designers, developers, licensors, and vendors, as well as transit agencies, may have proprietary, trade secret, and other information that they want to protect from disclosure. Although Appendix D is a checklist of clauses to consider when drafting a technology agreement and references the inclusion of nondisclosure and confidentiality clauses, Appendix F is a sample nondisclosure and confidentiality agreement.[68]

III. STATE STATUTES APPLICABLE TO TECHNOLOGY CONTRACTING

Some states and local governments have undertaken the task to centralize the design, procurement, and operation of their technology systems or services.[69] Some states have entered into a "single, long-term contract with a private entity to provide nearly *all* of the [government's] information services," including the design and procurement of "*every* government data center, computer network, and other information technology that provides services to the government itself and the public."[70]

The Maryland Department of Information Technology handles the procurement of most of the Maryland Department of Transportation's purchases of IT services, software, and hardware through "statewide master contracts."[71] Likewise, Connecticut has created a Department of Information Technology to handle information technology services for state entities.[72] Some states' technology departments also assist local government agencies with their technology procurements.[73]

Although some state statutes apply only to the procurement of technology by state agencies, some state laws apply to procurements by political subdivisions and other units of local government.[74] Thirty-five transit agencies reported that they are subject

[68] Appendix G, item 9, provided by the Greater Cleveland Regional Transit Authority.

[69] Darrell A. Fruth, *Economics and Institutional Constraints on the Privatization of Government Information Technology Services*, 13 Harv. J. Law & Tech. 521, 528 (2000), hereinafter referred to as "Fruth."

[70] *Id.* at 531 (emphasis in original).

[71] Maryland Dep't of Transportation, Office of Procurement, http://www.mdot.maryland.gov/Office%20of%20Procurement%20TSO/index.html (last accessed Feb. 24, 2017).

[72] Fruth *supra* note 69, at 530–31.

[73] *See* part III of the report.

[74] Cal. Pub. Contract Code § 20217(b) (2016); N.Y. CLS Pub. A §§ 1209(2)(b), (d), and (f) (2016); and VA. Code Ann. § 2.2-2012(B) (2016).

to state or local public procurement laws when soliciting and/or contracting for technology.[75] There are also state statutes that apply specifically to the procurement of technology.[76] Some statutes are specific to transit agencies. Fourteen agencies stated that there are state statutes or local ordinances that apply specifically to a solicitation and/or a contract for an acquisition of technology by their agency.[77] Although discussed to a limited extent in this part of the report, part XIII discusses state statutes that permit government agencies to negotiate with contractors, designers, developers, licensors, and vendors to obtain the best price or value for goods and services, including technology.

California has determined that "the award of purchase contracts by transit agencies under competitive bid procedures may not be feasible for products and materials that are undergoing rapid technological changes or for the introduction of new technologies into agency operations…."[78] Thus, the legislature has determined that "it is in the public interest to consider the broadest possible range of competing products and materials available, fitness of purpose, manufacturer's warranty, vendor financing, performance reliability, standardization, life cycle costs, delivery timetables, support logistics, and other similar factors in addition to price in the award of these contracts."[79]

Consequently, the state's Public Contract Code provides, *inter alia*, that

> a transit district or transportation agency may direct the purchase of…computers, telecommunications equipment, fare collection equipment, radio and microwave equipment, and other related electronic equipment and apparatus used in transit operations…by *competitive negotiation* upon a finding by two thirds vote of the board that the purchase of those products or materials in compliance with provisions of this code generally applicable to the purchase does not constitute a method of procurement adequate for the agency's needs.[80]

Another California statute allows the use of design–build contracts when agencies "have reported benefits from such projects including reduced project costs, expedited project completion, and design features that are not achievable through the traditional design–bid–build method."[81] The term *local agency* includes a city, county, or city and county, any transit district, municipal operator, any consolidated agency, any authority formed to provide transit service, and any county transportation commission or any other local or regional agency responsible for the construction of transit projects.[82]

Pursuant to section 22162, a local agency, except as otherwise provided, may use design–build contracts for projects in excess of $1,000,000 and award a contract based either on the low bid or the "best value."[83] When a transit district or similar local agency, as described in section 22161(f)(3), "awards a contract for the acquisition and installation of technology applications or surveillance equipment designed to enhance safety, disaster preparedness, and homeland security efforts," there is no "cost threshold and the contract may be awarded to the lowest responsible bidder or by using the best value method."[84]

The Maryland Transit Administration stated that Maryland regulations allow procurements of commercial products that are unique to a transit agency to bypass Maryland's Information Technology Department's project oversight.[85]

A Minnesota statute, designed to protect the blind or visually impaired, requires the Commissioner of Administration to develop nonvisual, technology access standards with minimum specifications as set forth in the statute.[86] The standards must be included in all contracts for the procurement of IT by or for the use of agencies and political subdivisions.[87]

A New York statute that applies to the New York City Transit Authority requires that

> [a]ny contract for public work, except where there is an emergency involving danger to life or property, the estimated cost of which exceeds twenty thousand dollars shall be made by the authority only upon public letting founded on sealed bids.[88]

Furthermore, although the statute allows for some exceptions,

> [a]ny purchase contract, including but not limited to contracts for the purchase of equipment, materials or

[75] *See* Appendix C, transit agencies' responses to question 8. Five agencies reported that they are not and two agencies did not respond to the question. *Id.*

[76] N.C. Gen. Stat. § 147-33.97 (2016).

[77] *See* Appendix C, transit agencies' responses to question 9. Twenty agencies said that there are none, and eight agencies did not respond to the question. *Id.*

[78] Cal. Pub. Cont. Code § 20217(a) (2016).

[79] *Id.*

[80] Cal. Pub. Cont. Code § 20217(b) (2016) (emphasis supplied).

[81] Cal. Pub. Cont. Code § 22160(a) (2016).

[82] Cal. Pub. Cont. Code §§ 22161(f)(1) and (3) (2016). The term local agency also includes the San Diego Association of Governments, as referenced in the San Diego Regional Transportation Consolidation Act. Cal. Pub. Cont. Code § 22161(f)(4) (2016).

[83] Cal. Pub. Cont. Code § 22162(a) (2016) (not applicable to state highway system projects).

[84] Cal. Pub. Cont. Code § 22162(b) (2016) (not applicable to state highway system projects).

[85] Citing Md. Code Regs. § 21.01.03.5 (2016).

[86] Minn. Stat. § 16C.145(a) (2016). The statute also applies to state colleges and universities and encourages the University of Minnesota to consider similar standards.

[87] *Id.*

[88] N.Y. CLS Pub. A § 1209(1) (2016).

> supplies, the estimated cost of which exceeds the sum of ten thousand dollars, shall be made by the authority only upon public letting founded on sealed bids….[89]

Another New York statute provides that, except as otherwise stated,

> all purchase contracts for supplies, materials or equipment involving an estimated expenditure in excess of one hundred thousand dollars and all contracts for public work involving an estimated expenditure in excess of one hundred thousand dollars shall be awarded by the authority to the lowest responsible bidder….[90]

However, there are several instances in New York when a transit authority may declare that competitive bidding is inappropriate, including when "the authority wishes to experiment with or test a new product or technology or evaluate the service or reliability of a new source for a particular product or component…."[91]

In Virginia, the Virginia Information Technologies Agency (VITA) is responsible for procuring IT and telecommunications goods and services of every description for VITA's benefit or on behalf of other state agencies and institutions, as well as other agencies or institutions to the extent authorized by VITA.[92] Virginia's statute requires that all statewide contracts and agreements made by VITA for the purchase of communications services, telecommunications facilities, and IT goods and services must "provide for the inclusion of counties, cities, and towns…."[93] Localities, unless otherwise prohibited, "are authorized to purchase information technology goods and services of every description from VITA and its vendors…."[94]

IV. APPLICABILITY OF STATE CONTRACT AND TORT LAW AND ARTICLE 2, UNIFORM COMMERCIAL CODE, TO TECHNOLOGY AGREEMENTS

A. Applicability of State Law on Contracts and Torts

State or local procurement laws, regulations, and policies should be consulted for their applicability to technology contracts, including their solicitation and award. However, to the extent not addressed in the procurement laws or a transit agency's technology agreement, disputes between a transit agency and a contractor, designer, developer, licensor, or vendor are likely to be decided based on state law on contracts and torts and Article 2 of its UCC.[95]

The parties' contract should state which jurisdiction's law and the body of law (*e.g.*, common law of contracts, the UCC, and/or other statutory law) that apply to the contracting process and to the contract, rather than leave the issues to a court's later determination. In general, if a contract involves both goods and services, but predominately involves a sale of goods, the parties may stipulate that the UCC applies to their contract; however, if a contract is one only for services, then the UCC does not apply. Moreover, when an agreement is predominately or only for the supply of technology services, it is not clear that the parties to a technology contract in every state could designate Article 2 of the UCC as the agreement's governing law. For example, although the case did not involve Article 2 of the UCC, the Maryland Court of Appeals has stated that "[t]he power to alter the effect of UCC provisions…is not unlimited.…[A]lthough 'an agreement can change the legal consequences which would otherwise flow from the provisions of the Act,' an agreement cannot alter 'the meaning of the statute itself.'"[96]

In the cases discussed in part A below, state law on contracts and torts governed the parties' claims and counterclaims. Part B discusses how the courts have applied Article 2 of the UCC to certain kinds of technology agreements.

At issue in *Superior Edge, Inc. v. Monsanto Company*[97] was a software development and license agreement between Superior Edge, Inc. (SEI) and Monsanto Company (Monsanto). After Monsanto became concerned that SEI would be unable to

[89] N.Y. CLS Pub. A § 1209(2) (2016) (*e.g.*, the existence of an emergency or the existence of other circumstances making competitive bidding impracticable or inappropriate).

[90] N.Y. CLS Pub. A § 1209(7)(a) (2016). The section does not apply to contracts for architectural, engineering, or other professional services.

[91] N.Y. CLS Pub. A § 1209(2)(f) (2016).

[92] VA. CODE ANN. § 2.2-2012(A) (2016).

[93] VA. CODE ANN. § 2.2-2012(B) (2016).

[94] VA. CODE ANN. § 2.2-2012(C) (2016).

[95] Lee B. Burgunder, *Legal Aspects of Managing Technology* 493 (2011), hereinafter referred to as "Burgunder." *See also*, Wall Data v. Los Angeles County Sheriff's Dept., 447 F.3d 769 (9th Cir. 2006) (holding that the Sheriff's Department committed copyright infringement when it installed computer software on more computers in excess of the number of licenses it had acquired from a software developer) and United States v. Oracle Corp., 751 F. Supp. 2d 842 (E. D. Va. 2010) (involving a case brought by the General Services Administration (GSA) under the False Claims Act against Oracle Corporation for overcharges for software that Oracle provided to the GSA).

[96] Lema v. Bank of America, N.A., 375 Md. 625, 642, 826 A.2d 504, 514 (Md. Ct. App. 2003) (stating also that the meaning of the UCC must be found in the UCC's text, including its definitions, and in appropriate extrinsic aid; that agreements may not make an instrument negotiable within the meaning of Title 3 except as provided in § 3-401; and that agreements also may not change the meaning of various U.C.C. terms, such as bona fide purchaser, holder in due course, or due negotiation) (citations omitted) (internal quotation marks omitted).

[97] 44 F. Supp. 3d 890 (D. Minn. 2014).

deliver timely the promised software developments, and because SEI would not allow Monsanto to review its source code, Monsanto terminated SEI's services.[98] A federal district court in Minnesota, applying Missouri law,[99] ruled first that Monsanto's counterclaims stated plausible claims for breach of contract, money had and received, and fraudulent and negligent inducement.[100] The court agreed also that Monsanto's counterclaim was sufficient to state a claim for conversion of Monsanto's IP.[101]

In *System Automation Corp. v. Ohio Department of Administrative Services*,[102] an Ohio appellate court applied Ohio law to the question of whether the Ohio Department of Administrative Services (DAS) had renewed or extended a contract with System Automation Corp. (SAC) for a computer database system to process and track licenses issued by all state professional boards in Ohio.[103] Under Ohio law, the director of DAS had discretion to delegate his powers.[104] Although DAS argued that the director had not renewed the contract, the court held that other DAS management personnel had renewed it.[105] The appellate court affirmed a judgment of the Ohio Court of Claims that DAS had to compensate SAC for all deliverables that DAS accepted, plus retainage.[106]

In *Hancock Electronic Corp. v. WMATA*,[107] Hancock Electronic Corp. (Hancock) and the Washington Metropolitan Area Transit Authority (WMATA) had a contract whereby Hancock would replace the braking systems on approximately 300 railcars. The contract required Hancock "to provide WMATA with certain technical data about the systems" and to prove through testing that it had performed the contract.[108] When WMATA requested Hancock's technical data and software so that a third party could conduct performance testing, Hancock refused. Hancock argued that "its technical data and software are proprietary and [that] its contract with WMATA does not provide for their disclosure either to WMATA or to a third party."[109] Thereafter, WMATA terminated the parties' contract and invoked the contract's default clause.[110]

Because Hancock had not availed itself of the administrative procedures specified in the contract, a federal district court in Virginia dismissed Hancock's claim. In upholding the ruling, the Fourth Circuit also addressed Hancock's argument that WMATA's demand for the technical data and software was a "cardinal change" to the contract that obviated any requirement of Hancock to resort first to the contract's administrative procedures. The Fourth Circuit held:

> WMATA's demands, even if not covered by the contract, did not effect a cardinal change to the contract so as to nullify the contract's dispute resolution mechanisms. The electronic aspects of Hancock's replacement brakes had to be tested, and WMATA was entitled under the contract to determine whether they qualified.[111]

The court held that the dispute was one that the contract required to be resolved through the administrative procedures specified in the contract.[112]

In *Bowne Management Systems, Inc. v. City of New York*,[113] the New York City Department of Transportation (DOT) had a contract with Bowne Management Systems, Inc. (Bowne) for the creation and implementation of a Sign Information Management System (SIMS) to allow the DOT to inventory, identify, and manage approximately 1.3 million traffic control devices in the five boroughs of New York City.[114] After the DOT terminated the contract for cause and the Supreme Court, Nassau County, dismissed Bowne's Article 78 proceeding, Bowne commenced a plenary action alleging breach of contract by the city and the DOT.[115] A New York court, applying New York law, denied the defendants' motion that Bowne's claims were barred by collateral estoppel and that Bowne failed to file a proper notice of claim under the affected statute. Because Bowne did not have "a full and fair opportunity to litigate its contract claims in the Article 78 proceeding," the court held that the doctrine of collateral estoppel did not apply.[116]

Thus, a variety of state contract and tort claims, as well as other claims and defenses under state law, may arise under a transit agency's technology agreement, including claims for breach of contract, money had and received, fraudulent or negligent inducement, conversion, negligence, bad faith termination,

[98] *Id.* at 896.

[99] *Id.* at 899 N 5.

[100] *Id.* at 896.

[101] *Id.* at 909–10.

[102] 2004 Ohio 5544, 2004 Ohio App. LEXIS 4964, at *1 (Ohio App. 2004).

[103] *Id.* at P2.

[104] *Id.*

[105] *Id.* at P25.

[106] *Id.* at P28.

[107] 81 F.3d 451 (4th Cir. 1996).

[108] *Id.* at 453.

[109] *Id.*

[110] *Id.*

[111] *Id.* at 454.

[112] *Id.* at 455.

[113] 32 Misc. 3d 1215(A), 934 N.Y.S. 2d 32, 2011 N.Y. Misc. LEXIS 3431, at *1 (N.Y. Sup. Ct. 2011).

[114] *Id.*

[115] *Id.* at *6.

[116] *Id.* at *13. The court also held that because defendants "were put on sufficient notice" there was compliance with the New York statute.

implied renewal of a contract, excused performance, and failure to pursue required administrative remedies. As discussed in part B.5 in the next section, when parties have disputes arising under a technology contract, the economic loss doctrine in some cases may preclude the joinder of tort claims with contract claims.

B. Article 2, Uniform Commercial Code

1. Application of Article 2 to Digital Products

State law primarily governs the contractual relationships at issue in technology contracts. Claims arising out of a licensing agreement likely would be governed by a state's law of contracts, Article 2 of the UCC, and/or any applicable state licensing or other statutory law.[117] With some exceptions, all states and the District of Columbia have adopted the UCC or some articles of the UCC.[118] In this part, the report will cite primarily to the New York UCC.

Even though the use of software was not foreseen at the time of the states' adoption of the UCC, the UCC may apply to disputes involving a technology agreement. Although there is "'more than a little uncertainty…where computer software transactions fit within the body of commercial law,'"[119] the courts often apply Article 2 of the UCC by analogy in disputes over the sale or licensing of software.[120] Although the UCC "predates the digital world," scholars agree that the courts have applied the UCC to "digital products."[121] With the exception of custom-programmed software, Article 2 has been applied to "software licensing…including contract formation, interpretation, performance, warranties, and remedies."[122]

In *Surplus.com, Inc. v. Oracle Corp.*,[123] even though the software in dispute was not fully operational until a separate company developed and implemented the software, the issue was whether the software program that the plaintiff purchased was a "good" that is subject to the UCC.[124] In opposing a motion to dismiss by Oracle Corp. (Oracle) regarding the applicability of a statute of limitations, the plaintiff argued that "a transaction predominately involving the intellectual property rights to software is outside the scope of the UCC."[125] A federal district court in Illinois, applying Illinois law, held that the court must apply a "predominant purpose test" when a sale of goods also includes a sale of services to determine whether the transaction is a sale of a good that is subject to the UCC.

The court granted Oracle's motion to dismiss because "the various services envisioned by those agreements were incidental in nature and certainly ancillary to the software itself."[126] Furthermore, the pertinent agreements' "provision for maintenance and technical support do not render the software a 'service' rather than a 'good.'"[127] Thus, the UCC's four-year statute of limitations barred the plaintiff's claim for breach of contract.

In *Rottner v. AVG Technologies USA, Inc.*,[128] a federal district court in Massachusetts, applying Delaware law, stated that "[a]lthough the Delaware courts have not directly addressed this distinction, courts nationally have consistently classified the sale of a software package as the sale of a good for UCC purposes."[129] The court distinguished a Delaware case, *Wharton Management Group v. Sigma Consultants*,[130] involving custom designed software, because in *Wharton* a programmer had to prepare a study of the customer's existing operations before designing, developing, and installing computer software to meet the customer's needs and objectives. In *Wharton*, "[i]n essence, 'it was [the programmer's] knowledge, skill and ability for which Wharton bargained…[and] purchased in the main….'"[131]

---

[117] *See* Matthew J. Smith, *An Overview of the Uniform Computer Information Transactions Act: Warranties, Self-Help, and Contract Formation[:] Why UCITA Should be Renamed 'The Licensors' Protection Act*, 25 S. ILL U. L. J. 389 (2001), hereinafter cited as "Matthew Smith."

[118] USLegal.com, States Adopting the UCC, https://uniformcommercialcode.uslegal.com/states-adopting-the-ucc/ (last accessed Feb. 24, 2017). *See also*, Landy & Mastrobattista, *supra* note 16, at 194.

[119] Matthew Smith, *supra* note 117, at 389 (citation omitted).

[120] *See* Bonna Lynn Horovitz, *Computer Software as a Good under the Uniform Commercial Code: Taking a Byte out of the Intangibility Myth*, 65 B.U.L. REV. 129, 145–46 (1985).

[121] Landy & Mastrobattista, *supra* note 16, at 194.

[122] *Id.*

[123] No. 10 CV 03510, 2010 U.S. Dist. Lexis 136254, at *1 (N.D. Ill. Dec. 23, 2010).

[124] *Id.* at *3.

[125] *Id.* at *8 (internal quotation marks omitted).

[126] *Id.* at *12 (citation omitted).

[127] *Id.* at *15 (citation omitted).

[128] 943 F. Supp. 2d 222 (D. Mass. 2013).

[129] *Id.* at 230 (citing ePresence, Inc. v. Evolve Software, Inc., 190 F. Supp. 2d 159, 163 (D. Mass. 2002) (applying California law); Micro Data Base Sys. Inc. v. Dharma Sys., Inc., 148 F.3d 649, 654 (7th Cir. 1998) (applying New Hampshire law); Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 675–76 (3d Cir. 1991) (applying Pennsylvania law and noting that a majority of academic commentaries support the view that software fits within the definition of a good under the UCC); Newcourt Fin. USA, Inc. v. FT Mortg. Cos., 161 F. Supp. 2d 894, 897–98 (N.D. Ill. 2001) (applying Illinois law); Architectronics, Inc. v. Control Sys., Inc., 935 F. Supp. 425, 432 (S.D.N.Y. 1996) (applying New York law); and Olcott Int'l & Co. Inc. v. Micro Data Base Sys., Inc., 793 N.E.2d 1063, 1071 (Ind. App. 2003)).

[130] No. C.A. 89-C-JA-165, 1990 Del. Super. LEXIS 54, at *1 (Del. Super. Ct. Jan. 29, 1989).

[131] *Rottner*, 943 F. Supp. 2d at 230 (citations omitted).

Likewise, in *Simulados Software, LTD v. Photon Infotech Private, LTD*,[132] Simulados Software, LTD (Simulados), a Texas software development company, developed a program for which it entered into a contract with Photon Infotech Private, LTD (Photon), a New Jersey corporation with a virtual office in San Jose, California, to produce a version that was compatible with Apple Macintosh computers, as well as an Internet web application.[133] Simulados, alleging that Photon never fulfilled its contractual obligations, sued, *inter alia*, for breach of contract, fraud, and fraudulent inducement.[134]

A federal district court in California agreed that "[a]pplying the UCC to software poses a complex issue because transactions for software often combine elements of both goods and services. As such, courts have arrived at different decisions concerning whether software transactions are covered by the UCC."[135] Nevertheless, the court dismissed Simulados' claim that under the UCC it was "entitled to remedies outside the contract" because the parties' contract was for the sale of software.[136] The court held that "[t]he primary test used by courts to determine whether software is a good under the UCC is the *predominant factor test*, where courts look to the 'essence of the agreement' on a case-by-case basis to decide how to characterize the transaction."[137] The court stated that "mass-produced, standardized, or generally available software, even with modifications and ancillary services included in the agreement, is a good that is covered by the UCC."[138] Thus, there are instances when software may be considered to be a good under the UCC even though ancillary services are involved. However, when "software is designed from scratch, or the transaction is mainly for one party's knowledge and skills in creating software, the software is often found to be a service rather than a good."[139] The court held that the contract with Photon to produce a Mac-compliant version of Simulados' existing software was for a service to which the UCC did not apply.[140]

2. Warranties Created by Oral or Written Communications

Because warranties that may arise under a state's UCC are particularly important, vendors and licensors of technology may seek to disclaim them in their agreements. Under the UCC, a formal declaration or promise may result in the creation of a warranty,[141] but an oral or written communication also may give rise to the existence of a warranty.[142] Under New York UCC section 2-313(1),

> (a) Any affirmation of fact or promise made by the seller to the buyer which relates to the goods and becomes part of the basis of the bargain creates an express warranty that the goods shall conform to the affirmation or promise.
>
> (b) Any description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description.
>
> (c) Any sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model.

Section 2-313(2) states that to create an express warranty, a seller need not "use formal words such as 'warrant' or 'guarantee' or…have a specific intention to make a warranty, but an affirmation merely of the value of the goods or a statement purporting to be merely the seller's opinion or commendation of the goods does not create a warranty."

Because of the informal manner in which warranties may arise, a technology agreement is likely to include an "integration" or "entire agreement" clause that excludes any oral or written agreements that preceded the parties' final, written agreement.[143] Because such a clause is used to control a company's warranty or other obligations,[144] a transit agency should make certain that its contract includes anything that a contractor, designer, developer, licensor, or vendor promised or represented during pre-contract proposals and/or negotiations.[145]

3. Implied Warranties Under the UCC

Importantly, implied warranties under the UCC may arise "simply because the transaction occurred."[146] Under the UCC, merchants imply in their contracts that their goods will be merchantable.[147] Section 2-314(1) provides that, unless excluded or modified, "a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind."[148] Section 2-314(2)(c) states that for goods to be merchantable, the goods at a minimum must be "fit for the ordinary purposes for which such goods are used…." Under UCC section 2-315, when a

[132] 40 F. Supp. 3d 1191 (N.D. Cal. 2014).
[133] *Id.* at 1194.
[134] *Id.* at 1196.
[135] *Id.* at 1199.
[136] *Id.*
[137] *Id.* (citations omitted) (emphasis supplied).
[138] *Id.*
[139] *Id.* at 1201.
[140] *Id.* at 1202.
[141] Burgunder, *supra* note 95, at 495.
[142] *Id.*
[143] *See* Landy & Mastrobattista, *supra* note 16, at 206.
[144] Burgunder, *supra* note 95, at 496
[145] *Id.*
[146] Burgunder, *supra* note 95, at 497.
[147] *Id.*
[148] *See* N.Y. U.C.C. § 2-316 (2016).

> seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is unless excluded or modified under the next section an implied warranty that the goods shall be fit for such purpose.[149]

Moreover, the UCC provides that, unless excluded or modified by section 2-316, "other implied warranties may arise from course of dealing or usage of trade."[150]

Two important implied warranties are the UCC's warranty of title and warranty against infringement. Under UCC section 2-312, a seller warrants in a sales contract that "the title conveyed shall be good, and its transfer rightful" and that "the goods shall be delivered free from any security interest or other lien or encumbrance of which the buyer at the time of contracting has no knowledge."[151] The warranty may be "excluded or modified only by specific language or by circumstances which give the buyer reason to know that the person selling does not claim title in himself or that he is purporting to sell only such right or title as he or a third person may have."[152]

Furthermore, unless the parties have agreed to the contrary, "a seller who is a merchant regularly dealing in goods of the kind warrants that the goods shall be delivered free of the rightful claim of any third person by way of infringement or the like but a buyer who furnishes specifications to the seller must hold the seller harmless against any such claim which arises out of compliance with the specifications."[153] As one commentator explains, "[i]f a company sells products, then, by implication, it promises that the product does not infringe the intellectual property rights of another."[154]

As noted, the parties' technology agreements may exclude implied warranties.[155] Exclusions of warranties should be set forth in conspicuous language.[156] The disclaimer of an implied warranty must mention the word *merchantability*.[157] A disclaimer of warranties may state, for example, that the seller "disclaims all implied warranties, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose."[158]

4. Damages Under the UCC

As for damages for a breach of an agreement that comes within the meaning of the UCC, the most important remedies are for compensatory and consequential damages.[159] For instance, the New York UCC section 2-714(2) states:

> The measure of damages for breach of warranty is the difference at the time and place of acceptance between the value of the goods accepted and the value they would have had if they had been as warranted, unless special circumstances show proximate damages of a different amount.

Under UCC section 2-714, "a buyer not only is entitled to compensation for loss of the benefit of the bargain but also may receive incidental and consequential damages."[160] The term consequential damages refers to the "additional costs and expenses…that the non-breaching party foreseeably incurs because of the breach," such as lost profits.[161] Consequential damages are:

> (a) any loss resulting from general or particular requirements and needs of which the seller at the time of contracting had reason to know and which could not reasonably be prevented by cover or otherwise; and
>
> (b) injury to person or property proximately resulting from any breach of warranty.[162]

On the other hand, the cost of storage incurred because of a breach is an incidental cost.[163]

Developers and vendors are likely to try to exclude their liability for consequential damages, as well as limit or exclude their other potential liabilities. Some transit agencies may have sufficient leverage or bargaining power to negotiate better terms. If an agency is unable to reach an agreement that allows the agency to claim consequential damages for a developer's or vendor's breach of an agreement, the agency still may attempt to negotiate better terms.

First, for example, the parties may be able to agree to a cap on recoverable damages that are determined by a formula or to include a liquidated damages clause that applies to a developer's or vendor's failure to perform as described in the contract.[164]

[149] N.Y. U.C.C. § 2-315 (2016).

[150] N.Y. U.C.C. § 2-314(3) (2016).

[151] N.Y. U.C.C. §§ 2-312(1)(a)–(b) (2016).

[152] N.Y. U.C.C. § 2-312(2) (2016).

[153] N.Y. U.C.C. § 2-312(3) (2016).

[154] Burgunder, *supra* note 95, at 497. Federal and state consumer warranty laws may prevent or limit the exclusion of implied warranties vis-à-vis consumers. *Id.* at 498.

[155] *Id.* at 498.

[156] N.Y. U.C.C. § 2-316(2) (2016) ("Subject to subsection (3), to exclude or modify the implied warranty of merchantability or any part of it the language must mention merchantability and in case of a writing must be conspicuous, and to exclude or modify any implied warranty of fitness the exclusion must be by a writing and conspicuous. Language to exclude all implied warranties of fitness is sufficient if it states, for example, that "There are no warranties which extend beyond the description on the face hereof.").

[157] Burgunder, *supra* note 95, at 498.

[158] *Id.*

[159] *Id.* at 500.

[160] *Id.* at 501.

[161] S*ee* Landy & Mastrobattista, *supra* note 16, at 213.

[162] N.Y. U.C.C. §§ 2-715(2)(a) and (b) (2016).

[163] *See* Landy & Mastrobattista, *supra* note 16, at 214.

[164] Mistry Prabhudas Manji Eng. Pvt. Ltd. v. Raytheon Eng'rs & Constructors, Inc., 213 F. Supp. 2d 20, 24 (D. Mass. 2002).

Second, a transit agency may negotiate for the recovery of foreseeable damages that are within the contemplation of the parties at the time of contracting (*e.g.*, a special hazard) that are not limited to or excluded by the contract.[165]

Third, the parties may agree that "substitution costs," similar to the UCC's concept of cover, are recoverable.[166] UCC section 2-712(1), which applies to "cover" or a buyer's procurement of substitute goods, states in part that "[a]fter a breach…the buyer may 'cover' by making in good faith and without unreasonable delay any reasonable purchase of or contract to purchase goods in substitution for those due from the seller." The UCC allows a buyer to "recover from the seller as damages the difference between the cost of cover and the contract price together with any incidental or consequential damages…less expenses saved in consequence of the seller's breach."[167] Even if consequential damages are excluded, the parties may be able to agree that incidental damages are allowable.

Fourth, a transit agency may be able to obtain other concessions, such as a longer warranty.[168] Fifth, the parties' agreement could provide that any limitation on or exclusion of damages does not apply to claims for delay damages.

Finally, UCC section 2-719(1)(a) allows the parties to provide in their agreement for other remedies, such as "return of the goods and repayment of the price [or] repair and replacement of non-conforming goods or parts."[169] However, when a limited remedy under UCC section 2-719(1) fails in its essential purpose, the question arises as to whether an injured party may claim consequential damages even if the agreement excludes consequential damages. According to one court, "courts across the country are split on the question."[170] Rather than leave the issue unresolved, a technology agreement could provide, assuming it excludes consequential damages, that consequential damages are not excluded when "circumstances" cause a transit agency's limited remedy under section 2-719(1)(a) to fail of its essential purpose.[171]

5. Economic Loss Doctrine

The "existence of the U.C.C.…serves as one of the founding principles for the creation of the economic loss doctrine."[172] The doctrine or rule is a "judicial construct" that attempts to impose a "boundary line" on when a party to a contract may bring or join a tort claim, such as for negligence or for strict liability.[173] The economic loss doctrine seeks "'to preserve the distinction between contract and tort theories in circumstances where both theories could apply.'"[174] Under the rule, only damages that represent a party's economic losses are recoverable under contract law or the UCC.[175] Economic losses "include lost profits, repair or replacement, downtime, overtime, and other incidental and consequential damages."[176]

There are cases holding that the economic loss doctrine bars tort claims when "losses relate to the subject matter of the contract,"[177] when a "tort claim arises out of the same set of facts as a breach of contract claim,"[178] and/or when "a plaintiff's claim involves merely disappointed expectations arising from the plaintiff's bargain with the defendant."[179] The term *disappointed expectations* refers to a claim for damages that was within the parties' contemplation at the time of contracting, and therefore, is not allowable.[180]

There are exceptions to the economic loss rule.[181] First, there is precedent holding that the doctrine only applies in cases involving contracts for the sale of goods, and thus, does not apply to claims "for the negligent supply of services."[182]

Second, although "claims for fraud in the *performance* of a contract are sometimes barred,[183] the doctrine does not necessarily bar tort claims for negligent misrepresentation,[184] fraudulent representation,[185] or fraud in the inducement of a contract.[186]

Third, even when the subject matter of an action relates to a contract between the parties or when a tort claim is "based on the same facts as a breach of

[165] Anchor Sav. Bank, FSB v. United States, 81 Fed. Cl. 1, 75 (Ct. Cl. 2008).

[166] *See id.* at 125.

[167] N.Y. U.C.C. § 2-712(2) (2016).

[168] *See* Ebasco Services, Inc. v. Pennsylvania Power & Light Co., 460 F. Supp. 163, 180 (E.D. Pa. 1978).

[169] Burgunder, *supra* note 95, at 501.

[170] Schurtz v. BMW of North America, 814 P.2d 1108, 1113 (Utah 1991) (citations omitted).

[171] N.Y. U.C.C. § 2-719(2) (2016).

[172] Ralph C. Anzivino, *The Economic Loss Doctrine: Distinguishing Economic Loss from Non-Economic Loss*, 91 Marq. L. Rev. 1082 (2008), hereinafter referred to as "Anzivino."

[173] Vincent R. Johnson, *The Boundary-Line Function of the Economic Loss Rule*, 66 Wash & Lee L. Rev. 523, 528, and 584 (2009), hereinafter referred to as "Johnson."

[174] Johnson, *supra* note 173, at 546 (footnote omitted).

[175] Anzivino, *supra* note 172, at 1081.

[176] *Id.*

[177] Johnson, *supra* note 173, at 575.

[178] *Id.* at 580. *See also*, Anzivino, *supra* note 172, at 1109.

[179] Johnson, *supra* note 173, at 576 and 578.

[180] *Id. See also*, Anzivino, *supra* note 172, at 1117.

[181] *Id.* at 524.

[182] *Id.* at 527.

[183] *Id.* at 568 (emphasis supplied).

[184] *Id.* at 530.

[185] *Id.* at 533.

[186] *Id.* at 568. *See also*, Ralph C. Anzivino, *supra* note 172, at 1109.

contract claim," the doctrine may not apply when a defendant had an "independent tort" duty to the plaintiff.[187] Thus, when there is "a duty of care independent of any contractual obligations, the *economic loss* rule has no application and does not bar a plaintiff's tort claim, because the claim is based on a recognized independent duty of care and thus falls outside the scope of the *economic loss* rule."[188]

Fourth, the economic loss rule does not apply, and a tort action may be brought when "a defective product causes *physical* harm to a person or to property *other than [to] the product itself*" that is the subject of the parties' contract.[189] When other property is damaged by a breach of contract, the "'other property' damage…triggers tort liability."[190] However, the economic loss rule may preclude tort claims when the other property that was damaged was part of an "integrated system," a principle adopted by most states in connection with the economic loss rule.[191] When there is physical harm to an integrated system, only damages for economic losses are recoverable for the product or integrated system that is the subject of the parties' contract; there is no additional remedy in tort.[192]

In sum, the economic loss doctrine "does not provide a 'clear and predictable limit to liability'"; however, obtaining a "recovery in tort actions for purely economic losses is often difficult to obtain."[193]

C. Uniform Computer Information Transactions Act

The UCITA that applies to all computer information transactions "establishes rules where none exist now or improves present law[] and represents the first comprehensive uniform computer information licensing law."[194] Because of various groups' opposition to UCITA, only Virginia and Maryland have enacted UCITA.[195] Nevertheless, even in states that have not enacted UCITA, the courts may look to UCITA for guidance.[196]

UCITA is limited to "computer information transactions,"[197] such as "an agreement…to create, modify, transfer, or license computer information or informational rights in computer information."[198] The Act expressly excludes a contract that does not require that the information be furnished as computer information or a contract in which computer information is *de minimis* with respect to the primary subject matter of the transaction.[199]

Although UCITA and UCC Article 2 are similar in many ways,[200] UCITA's provisions are more favorable to licensors even when the licensees are businesses.[201] Under UCITA, "any information transaction that transfers fewer than all rights in the information is automatically deemed to be a license, regardless of whether title to a copy is transferred."[202]

Because UCITA applies to transactions in electronic information, both licensors and licensees should be aware of UCITA's provisions.[203] For example, although UCITA generally permits transfer of a contractual interest under a license, the parties may agree to prohibit a transfer.[204] Section 503 of UCITA provides that "a term prohibiting transfers of a party's 'contractual interest' is enforceable."[205] Section 605 of UCITA "permits providers to enforce use restrictions on information through 'automatic restraints' if the agreement authorizes use of the restraint, and if the restraint prevents a use inconsistent with the agreement."[206]

---

[187] Johnson, *supra* note 173, at 539–40.

[188] *Id.* at 566 (*quoting A.C. Excavating v. Yacht Club II Homeowners Ass'n*, 114 P.3d 862, 866 (Colo. 2005)) (emphasis in original).

[189] Johnson, *supra* note 173, at 549 (emphasis in original). *See also*, Anzivino, *supra* note 172, at 1083–84.

[190] Anzivino, *supra* note 172, at 1089. *See also*, *id.* at 1099–1103.

[191] *Id.* at 1090 and N 66 (citing cases). *The Restatement (Third) of Torts* recognizes economic loss damage as damage to the product itself or its integrated system. *See id.* at 1116–17.

[192] Anzivino, *supra* note 172, at 1092.

[193] Johnson, *supra* note 173, at 534, 536 (footnote omitted).

[194] William R. Denny, *Overview of the Uniform Computer Information Transactions Act (UCITA) Report of the Joint Task Force of the Delaware Bar Association Sections of Commercial Law, Computer Law, Intellectual Property, and Real and Personal Property*, at 1 (Jan. 5, 2000), http://euro.ecom.cmu.edu/program/law/08-732/Transactions/UCITAOverview.pdf (last accessed on Feb. 24, 2017).

[195] Ward Classen, *A Practical Guide to Software Licensing for Licensees and Licensors* 266 (ABA 4th ed. 2010), hereinafter referred to as "Classen 4th ed."

[196] Rhone-Poulenc Agro v. Dekalb Genetics Corp., 284 F.3d 1323, 1331 (Fed. Cir. 2002) (stating that UCITA's provisions regarding the "licensing of intangible property provides guidance on the U.C.C.'s view of the common law"), *cert. denied*, Monsanto Co. v. Bayer CropScience, S.A., 123 S. Ct. 2668, 156 L. Ed.2d 655 (2003).

[197] UCITA § 103(a).

[198] UCITA § 102(11).

[199] UCITA § 103(d)(5).

[200] Nim Razook, *The Politics and Promise of UCITA*, 36 CREIGHTON L. REV. 643 (2003).

[201] *Id.* at 653.

[202] Deborah Tussey, *UCITA, Copyright, And Capture*, 21 CARDOZO ARTS & ENT. L. J. 319, 327 (2003) (footnote omitted), hereinafter cited as "Tussey."

[203] *Id.* at 326 (noting the argument that "UCITA expands the power of information providers to control information use through enforcement of restrictive license terms").

[204] UCITA, part V.

[205] Tussey, *supra* note 202, at 339.

[206] *Id.* at 330 (footnote omitted).

It should be noted that "UCITA's definitions of 'information' and 'informational rights' include content traditionally governed by copyright law and other intellectual property regimes as well as content, notably factual compilations, [that are] explicitly excluded from copyright protection under current law."[207] UCITA "covers much, but not all, of the same subject matter as copyright, as well as subject matter specifically denied copyright protection."[208]

> *UCITA allows contractual protection of public domain information, notably compilations of facts,* and allows providers to control all uses of information. UCITA offers compilers the opportunity to "legislate" protection of their products through mass market licenses whose terms are so pervasive as to establish rights "good against the world."[209]

However, the Copyright Act[210] may preempt state laws, including UCITA, that attempt to protect non-copyrightable data. UCITA recognizes the possibility of preemption, inas much as the Act states that "[a] provision of this [Act] which is preempted by federal law is unenforceable to the extent of the preemption."[211]

Finally, although only two states have adopted UCITA, a transit agency should be aware of UCITA's default rules on choice of law and of the forum applicable to an agreement subject to UCITA.

V. DRAFTING TECHNOLOGY AGREEMENTS

A. Issues and Clauses to Consider When Drafting Technology Agreements

Transit attorneys will want to be aware of issues affecting the drafting of technology contracts.[212] Accordingly, this part of the report and a checklist in Appendix D identifies issues and clauses for transit agencies to consider when drafting technology agreements; discusses the development of performance-based, functional, and technical specifications for technology agreements; and emphasizes the importance of interoperability and the interfacing of new technology with a transit agency's legacy and/or proprietary technology. Footnote 213 includes additional sources on technology contracting and checklists of recommended clauses.[213]

Twenty transit agencies that responded to the survey said that in their experience, there are clauses that are important to include in technology contracts.[214] Among the provisions that are important are clauses that clearly state a transit agency's expectations on customization, functional requirements, and delivery timeframe;[215] rights of ownership, particularly when licensed software generate data; and changes to an agreement.[216]

MARTA stated that it is "useful to clearly delineate the ownership of (and/or royalty free licenses to use) the work product/IP rights in the subject technology" and to have audit rights that allow an agency "to review prior and root software versions" to ensure that the agency is receiving the correct software.[217] Also, depending on the purpose of the technology, MARTA stated that it is important to have specific indemnification provisions for a transit agency's protection.[218] Other agencies reported that technology agreements should include clauses permitting termination for convenience, "proof of concept requirements,"[219] no-fault termination of an

[207] *Id.* at 327. The author notes that UCITA § 102(35) defines "information" as all "data, text, images, sounds, mask works, or computer programs, including collections and compilations of them" and that § 102(38) defines informational rights as explicitly including all rights created under current intellectual property laws. *Id.* N 38.

[208] *Id.* at 334.

[209] *Id.* at 337 (footnote omitted) (emphasis supplied).

[210] Pub. L. No. 94-553, 90 Stat. 2541 (1976).

[211] UCITA, § 105(a).

[212] *See, e.g.*, APTA Report, *supra* note 1, at 1 (noting provisions to consider).

[213] Benesch Law, *Tech Procurement eBook Updated*, http://www.beneschlaw.com/files/uploads/Documents/TechProcurement_eBook%20updated%20April%209%202015.pdf (last accessed Feb. 24, 2017) (identifying the types of IT contracts as licenses, development agreements, master services agreements, outsourcing agreements, systems implementation agreements, professional services and consulting agreements, support and maintenance agreements, cloud computing agreements, Internet and eCommerce agreements, and combinations of the above) (quotation marks omitted); Simon Cooper, *Bespoke vs Off-the-shelf Software* (Mar. 2015), http://www.hero-solutions.co.uk/articles/bespokevsofftheshelf.asp (last accessed Feb. 24, 2017) (discussing the pros and cons of bespoke or custom-built software and off-the-shelf software); Joel W. Mohrman, *Capitalizing on Intellectual Property: An Introduction to Licensing* 42, THE BRIEF, ABA Winter 2009; *Computer Economics*, "How to Evaluate IT Procurement Contracts" (Nov. 2008) (providing a checklist for reviewing technology contracts); and Carla Michler, *The Procurement Decision - Open or Closed Source Software*, 10 DEAKIN L. REV. 261, at 263–64 (2005).

[214] *See* Appendix C, transit agencies' responses to question 10. However, twenty agencies said that there were not; two agencies did not respond to the question. *Id.*

[215] *See* Appendix C, Capital Metropolitan Transportation Authority's response to question 10.

[216] *See* Appendix C, Maryland Transit Administration's response to question 10.

[217] *See* Appendix C, Metropolitan Atlanta Rapid Transit Authority's response to question 10.

[218] *See id.*

[219] *See* Appendix C, Golden Empire Transit District's response to question 10.

agreement,[220] and an agency's right to retain data from programs and any derivative work.[221] Likewise, when relevant, a contract should state whether a vendor is entitled to retain and market a transit agency's data after contract termination.

Appendix D is a detailed checklist of clauses to consider with citations to specific provisions of technology agreements provided by transit agencies responding to the survey. Part VII of this report discusses in more detail clauses on limitation on liability, indemnification, and representations and warranties.

B. Types of Specifications

Properly considered and drafted specifications are critical to the procurement of technology; however, specifications reportedly are given insufficient attention.[222] One source argues that more guidance is needed to improve "the terms and conditions and risk management for these procurements," because "[t]echnology procurements have inherent differences from other procurements…."[223] Although the types of specifications appear to overlap, commentators have distinguished functional and other specifications from technical specifications.

The term *functional specifications* "describe[s] software from the user's point of view," whereas the term *technical specifications* concerns issues such as "system architecture and programming languages."[224] The term *functional specifications* also refers to

> the specific objectives the client or developer wishes to achieve through the development of the Product. Functional Specifications may include, but are not limited to, screen layout, security requirements, record keeping or reporting process capabilities, and any other functional objective agreed upon by the contracting parties.[225]

Functional specifications "are a general description of how one sees or operates the system. They usually include a system overview, a high-level description of the system functionality, a description of the architecture, the description of interfaces with other systems, and a description of the 'look and feel' of the system."[226]

The term *technical specifications* includes "the size, number, speed and memory capabilities of the hardware, the response time, the interfaces with other products, and the compatibility with designated hardware or operating system software."[227] Technical specifications detail how coders will implement a system and describe the hardware and software that will operate a system, as well as provide a technical description of a system's functionality.[228]

In responding to the survey, seventeen transit agencies stated that they had used performance-based specifications in lieu of or in combination with other specifications.[229]

C. Transit Agencies' Use of Staff, Contractors, or Consultants to Develop Specifications

Transit agencies responding to the survey stated that their technology department or other agency employees developed the specifications for their projects[230] or that the agency's staff developed the specifications in conjunction with an engineering firm, contractor, consultant, or vendor.[231] Some agencies reported that they used an independent contractor or consultant or relied on a request for proposal (RFP).[232] The Capital Metropolitan Transportation Authority stated that in some cases, it relied on internal stakeholders and on consultants for its Computer-Aided Dispatch (CAD)/Automatic Vehicle Location (AVL) project.

The Milwaukee County Transit System (MCTS) stated that for its real-time and AVL specifications

> MCTS developed an internal committee and all the work was done internally. For both the fare system and MVSS projects, MCTS conducted an RFP process for qualified consultants and with both RFP's IBI Consultants was the successful applicant. MCTS worked closely with IBI to develop each technical specification.[233]

D. Transit Agencies' Use of Requests for Information or Proposals or a Separate Contract to Develop Specifications

If a transit agency is uncertain about the desired technical specifications, a request for information

[220] *See* Appendix C, Greater Peoria Mass Transit District's response to question 10.

[221] *See* Appendix C, responses of Fort Worth Transportation Authority and Utah Transit Authority to question 10.

[222] Tollen, *supra* note 26, at 55–56.

[223] APTA Report, *supra* note 1, at 1.

[224] Tollen, *supra* note 26, at 55.

[225] Mark L. Gordon, *Key Issues in Contracting for the Development of Joint and Derived Products*, 11 COMPUTER L. J. 1, 18 (1991–92), hereinafter referred to as "Gordon."

[226] Thomas M. Laudise & Leonard T. Nuara, *How to Contract for a Successful E-Commerce Development Project: Beating the Odds*, 58 BUS. LAW. 299, 311 (2002–03), hereinafter referred to as "Laudise & Nuara."

[227] Gordon, *supra* note 225, at 18.

[228] Laudise & Nuara, *supra* note 226, at 311.

[229] *See* Appendix C, transit agencies' responses to question 12. Twenty-three agencies reported that they had not. *Id.* Two agencies did not respond to the question. *Id.*

[230] *See* Appendix C, transit agencies' responses to question 11(a).

[231] *See id.*

[232] *See* Appendix C, responses of Golden Empire Transit District, Maryland Transit Administration, and Stark Area Regional Transit Authority (SARTA) to question 11(b).

[233] *See* Appendix C, Milwaukee County Transit System's response to question 11(a).

(RFI) and/or an RFP may be used to obtain information or guidance from interested licensors or vendors.[234] In New York, an RFI may be sent to potential bidders to "elicit responses that would enable the agency to write specifications to provide the agency with the best solution."[235] An RFP may be used to explain the requirements for the software or services that an agency wants to acquire.[236] In New York, a request for comment may be used "to solicit input from all potential bidders about a solicitation's structure and language to assess its impact on potential bidders.… An agency may submit a Draft RFP to all potential bidders for remarks/comments prior to issuance."[237]

Twenty-eight transit agencies responding to the survey stated that they used various methods to obtain information for the preparation of specifications.[238] The agencies said that they used contractors or consultants,[239] "expos" and trade exhibits,[240] RFIs,[241] site visits and/or RFIs from other transit agencies,[242] vendors,[243] and other forms of research, including the Internet.[244]

Another approach is to have the writing of specifications as a deliverable.[245] Thirteen transit agencies reported that they had issued a separate contract for the preparation of specifications for their technology acquisitions.[246]

E. Interfacing With Legacy and/or Proprietary Technology

Standards are developing at such a rapid pace that technology systems must be more interconnected to exchange or transfer data;[247] however, when procuring technology, a transit agency may have a legacy and/or proprietary system with which new software and/or hardware must interface properly. In addition to having proper specifications, an agency will want a contractor, designer, developer, licensor, or vendor to warrant that a new system will be able to interface with the agency's legacy and/or proprietary technology.

Recent articles have discussed the integration of legacy systems with new ones. Genesee & Wyoming kept "an aging train control system in Illinois while linking to a modern, computerized dispatching center in Vermont."[248] Although the existing system entered in service in April 1966, RailWorks Signals & Communications succeeded in interfacing the old equipment with a new centralized dispatch system.[249]

Another article describes a successful project for WMATA in which the "[s]ystems supporting finance, budgeting, materials management, and maintenance management were…replaced and integrated simultaneously."[250] The integration of the systems involved "four major COTS packages…including requirements validation, design, testing, implementation, and deployment of systems…."[251] One objective was to "minimize customization" and "leverage built-in industry best practices."[252]

[234] *See* State of Texas Contract Management Guide, at 37–38 (Sept. 2015), http://comptroller.texas.gov/procurement/pub/contractguide/contract-mgmt-guide-v1.14.pdf (last accessed Feb. 24, 2017) (summarizing the differences between invitations to bid, request for information, request for offer, request for proposals, and request for qualifications); Tom McEwen, Randall Guynes, Julie Wartell, & Steve Pendleton, Institute for Law and Justice, *Information Technology Acquisition (Final Report)*, at 45–56 (2002), http://www.ncjrs.gov/pdffiles1/nij/grants/204026.pdf (last accessed Feb. 24, 2017); Del. Code Ann. tit. 29, §§ 6924(b)–(c) (2016); Ariz. Rev. Stat. Ann. §§ 41-2532, 41-2533, and 41-2534(A)–(B) (2016); Colo. Rev. Stat. §§ 24-103-201 and 24-103-203(1)–(2) (2016); 30 ILCS 500/2010(a), 30 ILCS 500/15(a)–(b), and 30 ILCS 500/20-16 (2016).

[235] New York State Procurement Guidelines, at 16 (May 2014), hereinafter referred to as "N.Y. Procurement Guidelines," http://www.ogs.ny.gov/bu/pc/Docs/Guidelines.pdf (last accessed Feb. 24, 2017).

[236] Classen 2d ed., *supra* note 8, at 5.

[237] N.Y. Procurement Guidelines, *supra* note 235, at 16.

[238] *See* Appendix C, transit agencies' responses to question 11(b). Nine agencies reported that they had not; five agencies did not respond to the question. *Id.*

[239] *See* Appendix C, Mass Transportation Authority's response to question 11(b).

[240] *See* Appendix C, Brockton Area Transit Authority's response to question 11(b).

[241] *See* Appendix C, transit agencies' responses to question 11(b).

[242] *See id.*

[243] *See* Appendix C, responses of Fort Worth Transportation Authority and Maryland Transit Administration to question 11(b).

[244] *See* Appendix C, responses of Brockton Area Transit Authority, Capital Metropolitan Transportation Authority, Cobb County Department of Transportation, and Greater Peoria Mass Transit District to question 11(b).

[245] Tollen, *supra* note 26, at 59.

[246] *See* Appendix C, transit agencies' responses to question 11(c). Twenty-seven agencies reported that they had not issued a separate contract to develop technical specifications. *Id.* Two agencies did not respond to the question. *Id.*

[247] APTA Report, *supra* note 1, at 1.

[248] *Old and New Tech Combine for G&W Line* (RailWorks Today), July 2016, at 1, http://railworks.com/sites/default/files/railworks-today/RailWorks-Today-July-2016-I.pdf (last accessed Feb. 24, 2017).

[249] *Id.* (Internal quotation marks omitted.)

[250] Booz Allen Hamilton, *Modernizing WMATA Systems: A Transformation Success Alignment of Business and Technology through a Life Cycle Approach* (undated), at 1, https://www.boozallen.com/content/dam/boozallen/media/file/Modernizing_WMATA_Systems_TLC.pdf <page not found> (last accessed Feb. 24, 2017).

[251] *Id.* at 2.

[252] *Id.*

Omnitrans reported that it "upgraded its legacy Integrated Vehicle Logic Units (IVLU) Mobile Display Terminal (MDT) equipment with the new VI-IVLA and touch MDT as part of a Transitmaster hardware and back office equipment upgrade."[253]

However, the Maryland Transit Administration (MTA) emphasized the difficulty of procuring technology projects when new technologies must interface with existing technologies. The issue

> becomes particularly difficult when vendors are competitors for both new and existing technology and often make it difficult to work together. This can add significant burden to the agency in either time or money. It can take time to work out contractual relationships that lead to the desired end-product. It can cost significant money if the agency [must] become the integrator for the two technologies, dealing with both vendors and separate contractual arrangements.[254]

The MTA discussed one of its technology projects for which interfacing with MTA's existing software products is a requirement. The MTA's Bus Unified Systems Architecture project involves the procurement of an Intelligent Transportation System (ITS) consisting of on-board hardware and a fixed-end CAD/AVL system. The all on-board hardware is to be "unified to a complete package with all interfaces necessary for full operation."[255] The CAD/AVL system is to handle all data-gathering from the on-board hardware and provide a robust reporting mechanism that can be used across multiple departments. The fixed-end software is required to interface with several existing software products that the MTA owns, including fixed-route scheduling software and operational assignment software. Because of bid protests and re-advertising, the MTA said that the project is currently in "active evaluation."[256]

VI. TECHNOLOGY CONTRACTING AND CLOUD COMPUTING

A. Cloud Computing as an Alternative Delivery Mode

This report discusses cloud computing and services as a separate topic because "software licensing in the cloud differs from traditional licensing in that the end user is often not the licensee and may not have contractual privity with the licensor."[257] As other commentators explain, "[t]raditional IT outsourcing arrangements typically involve negotiated contracts for narrowly specified data storage and processing facilities and services for set periods of time," whereas "[c]loud computing tends to be rather different. The quantity of IT resources procured by the customer may fluctuate over time, often rapidly and dynamically in response to demand."[258]

As for their use of cloud computing, twenty-four transit agencies responding to the survey stated that they use cloud computing and/or other cloud-services.[259] Although a typical contract with a cloud service provider (CSP) has been described as an adhesion contract because of most clients' inability to modify the contract,[260] larger organizations, such as transit agencies, may be able to secure more favorable terms and conditions.[261]

With cloud computing, an end user "is purchasing a service not a software license."[262] Thus, the usual technology agreements may not adequately cover the risks that are present with cloud computing.[263] When considering the use of cloud services, among the threshold issues for transit agencies to evaluate are "how the cloud provider determines whether service levels are being achieved…who is responsible for measurement, and…what exceptions apply to service level performance."[264]

At the federal level, according to the Congressional Research Service (CRS), since 2009 the government

> has been shifting its data storage needs to cloud-based services and away from agency-owned, in-house data centers. This shift is intended to reduce the total investment by the federal government in information technology…, as well as realize other stated advantages of cloud

[253] *See* Appendix C, Omnitrans's response to question 2.

[254] *See* Appendix C, Maryland Transit Administration's response to question 2.

[255] *See id.*

[256] *See id.*

[257] Ward Classen, *A Practical Guide to Software Licensing for Licensees and Licensors*, at 269 (ABA 5th ed. 2011), hereinafter referred to as "Classen 5th ed."

[258] Simon Bradshaw, Christopher Millard, & Ian Walden, *Contracts for Clouds: Comparison and Analysis of the Terms and Conditions of Cloud Computing Services*, 19 INT. J. LAW INFO. TECH. 187 (2011), at text at notes 4–5), hereinafter referred to as "Bradshaw, Millard, & Walden."

[259] *See* Appendix C, transit agencies' responses to question 13. Eighteen agencies said that they do not use cloud computing. *Id.*

[260] Carlos A. Rohrmann & Juliana Falci Sousa Rocha Cunha, *Some Legal Aspects of Cloud Computing Contracts*, 10 J. INT'L COMM. L. & TECH. 37, 41 (2015), hereinafter referred to as "Rohrmann."

[261] *Id.*

[262] Classen 5th ed., *supra* note 257, at 275.

[263] Andrew Geyer & Melinda McLellanMchellen, *Strategies for Evaluating Cloud Computing Agreements*, 3 BLOOMBERG LAW REPORTS no. 13, at 1 (unnumbered) (2011), hereinafter referred to as "Bloomberg," https://www.hunton.com/files/Publication/662c62d8-9bb3-4b7d-b3ff-c878cd4b0ab7/Presentation/PublicationAttachment/d87ebda3-053a-4c23-b320-b999b7595738/Strategies_for_Evaluating_Cloud_Computing_Agreements.pdf (last accessed Feb. 24, 2017).

[264] *Id.*

> adoption: efficiency, accessibility, collaboration, rapidity of innovation, reliability, and security.[265]

However, there are challenges as agencies transition to cloud computing and services; for example,

> some agency chief information officers (CIOs) have stated that in spite of the stated security advantages of cloud computing, they are, in fact, concerned about moving their data from their data centers, which they manage and control, to outsourced cloud services. This and other concerns must be addressed to build an agency culture that trusts the cloud.[266]

The CRS report discusses security concerns and solutions from the perspective of a government agency when contracting for and using cloud computing.[267]

In contrast to the CRS report, another report foresees a rapid shift at the state level to the cloud.[268] In fact, there are already some state statutes on cloud computing.[269] In Illinois, all state agencies must "evaluate safe, secure cloud computing options, before making any new information technology or telecommunications investments, and, if feasible, adopt appropriate cloud computing solutions," as well as re-evaluate an agency's "technology sourcing strategy to include consideration and use of cloud computing solutions as part of the budget process."[270]

In New Jersey, the Big Data Alliance (BDA) is designated as the state's "advanced cyberinfrastructure consortium." BDA's mission is to encourage state government to address in a strategic and coordinated manner the challenges posed by a deluge of digital data, including "developing a shared data cloud that integrates data infrastructure, hosted data, and data analytics."[271] A Texas statute directs state agencies to consider cloud computing service options when purchasing "major information resources" but to ensure that projects using cloud computing services satisfy state standards for cybersecurity.[272]

Individuals responsible for procurements and contracts for cloud computing should consider private, public, and hybrid cloud computing and the services provided,[273] include contractual provisions that identify an agency's objectives, and detail the service model, such as Infrastructure as a Service (IaaS) or Software as a Service (SaaS).[274] A typical CSP contract or subscription agreement may include or be accompanied by a service level agreement.[275]

As an alternative delivery mode, cloud computing "raise[s] many of the same issues involved in software licensing, while at the same time creating issues unique to the respective delivery model."[276] Because cloud computing provides a "continuum of services" that businesses may access as needed, there are efficiencies and cost savings, because an end user pays only for "actual consumption."[277] Although the use of a private cloud is more expensive, an end user has more control of its data and greater security by using a private cloud.[278]

B. Risks to Address by Contract and Other Factors to Investigate

Privacy and security issues are implicated in cloud computing because in the course of a day, the data may reside "all around the globe."[279] A client's data "may be transferred at any time to another data center for *performance reasons*," transfers that a CSP may not report.[280] In such instances, data may become subject to different laws while in transit or when located at different data centers.[281] There is also a risk that data will be exposed to third parties while in transit.[282] A transit agency considering using a CSP should ascertain whether under the parties' agreement and/or under the law applicable to the agreement, the transit agency would have a claim for damages against the CSP for loss or destruction of the agency's data.[283]

The possible loss of full ownership rights and/or access to data have important ramifications for

[265] Patricia Moloney Filiola & Eric A. Fischer, *Overview and Issues for Implementation of the Federal Cloud Computing Initiative: Implications for Federal Information Technology Reform Management*, Congressional Research Service, at 1 (Jan. 20, 2015), http://www.fas.org/sgp/crs/misc/R42887.pdf (last accessed Feb. 24, 2017).

[266] *Id.*

[267] *Id.* at 14–15.

[268] Steve Towns, *State CIOs See Rapid Shift to the Cloud*, Government Tech, (May 2, 2015), http://www.govtech.com/computing/State-CIOs-See-Huge-Shift-to-the-Cloud.html (last accessed Feb. 24, 2017).

[269] There are state statutes also on cloud computing and student information. IDAHO CODE ANN. § 33-133 (2016); KY. REV. STAT. ANN. § 365.734 (2016); N.H. REV. STAT. ANN. § 189:68a (2016), and R.I. GEN. LAWS § 16-104-1 (2016).

[270] 20 ILCS 45/15(g) (2016).

[271] N.J. STAT. ANN. § 52:17C-3.4(a)(6) (2016).

[272] TEX. GOV'T CODE ANN. §§ 2157.007(a)–(d) (2016).

[273] Rohrmann, *supra* note 259, at 42.

[274] *Id.* at 41.

[275] T. Noble Foster, *Navigating Through the Fog of Cloud Computing Contracts*, 30 J. MARSHALL J. INFO. TECH & PRIVACY L. 13, 19 (2013), hereinafter referred to as "Foster." *See also*, Rohrmann, *supra* note 259, at 39–41.

[276] Classen 5th ed., *supra* note 257, at 265.

[277] *Id.* at 266.

[278] *Id.* at 267.

[279] *Id.* at 269.

[280] Foster, *supra* note 275, at 23 (emphasis in original).

[281] *Id.* at 25.

[282] *See id.*

[283] *See id.* at 23–24.

litigation.[284] Information that is retrievable on demand by a CSP client is considered to be within the client's control for purposes of discovery.[285] According to one source, a CSP could refuse to allow sufficient access to enable a client to comply with its e-discovery obligations.[286] Because a CSP could be subpoenaed for the same data,[287] a CSP contract should require that a CSP notify a transit agency of a subpoena before the CSP discloses any data.[288]

C. Negotiating the Terms of a CSP Contract

Scholars have analyzed the terms and conditions used by CSPs and have determined that the issues that providers and users tend to negotiate mostly are as follows:

1. Exclusion or limitation of liability and remedies, particularly regarding data integrity and disaster recovery;
2. Service levels, including availability;
3. Security and privacy…;
4. Lock-in and exit, including term, termination rights, and return of data on exit;
5. Providers' ability to change service features unilaterally; and
6. IP rights.[289]

Users generally, however, for several reasons are not successful in obtaining more favorable terms, because CSP contracts tend to be "designed for high-volume, low-cost, standard, commoditized services on shared multi-tenant infrastructure."[290] However, when users have more leverage or relative bargaining power, "large providers have departed from their standard terms to secure deals they perceive to be sufficiently worthwhile in terms of financial, strategic or reputational 'trophy' value."[291] Not only may government bodies and financial institutions have more purchasing power, but also "their internal procedures may make it difficult and time-consuming to contract on terms other than their own…."[292] It should be noted that there are resellers or outsourcers, referred to collectively as *integrators*, that contract with both providers and end users and that may be "better able than end users to negotiate improved terms with providers" and "prepared to give more contractual assurances than providers."[293]

D. Checklist of Provisions for a Cloud Computing Contract

A CSP contract should address access, confidentiality, hosting, privacy, and security as issues of utmost importance. It is recommended that a transit agency conduct "detailed due diligence" before executing an agreement and using a CSP's services.[294] A transit agency will want any agreement to protect the confidentiality of data and make adequate provisions for the return or other disposition of data at the end of the contract.[295] To the extent possible, transit agencies should ascertain the jurisdictions where data will reside and locations through which data will pass.[296] A transit agency's contract with a CSP should state clearly that a transit agency holds "all right, title, and interest in its data at all times,"[297] including while in transit,[298] as well as stipulate that a CSP does not hold any property rights in an agency's data.[299] The contract should state which jurisdiction's law governs the parties' agreement, in part because a CSP may have or use physical sites in different states or countries.[300]

A transit agency should have contractual rights both to audit a CSP's facilities and operations[301] and to request reports from a third party on a CSP's data

[284] Kenneth N. Rashbaum, Bennett B. Borden, & Theresa H. Beaumont, *Outrun the Lions: A Practical Framework for Analysis of Legal Issues in the Evolution of Cloud Computing*, 12 Ave Maria L. Rev. 71, 83 (2014), hereinafter referred to as "Rashbaum, Borden, & Beaumont" (stating that the "[l]ocation of data stored in the Cloud can raise thorny jurisdictional issues" and that "[i]n the Cloud environment, even determining where data is located may be complex").

[285] *Id.* at 86–87.

[286] *Id.* at 83.

[287] *Id.* at 85–86. *See also*, Josiah Dykstra & Damien Riehl, *Forensic Collection of Electronic Evidence from Infrastructure-as-a-Service Cloud Computing*, 19 Rich. J. L. & Tech. 1 (2012) and Joshua Gruenspecht, *Reasonable Grand Jury Subpoenas: Asking for Information in the Age of Big Data*, 24 Harv. J. L. & Tech. 543 (2011).

[288] Bloomberg, *supra* note 263, at 2.

[289] W. Kuan Hon, Christopher Millard, & Ian Walden, Negotiating Cloud Contracts: Looking at Clouds from Both Sides Now, 16 Stan. Tech. L. Rev. 79, 81, 83 (2012), hereinafter referred to as "Hon, Millard, & Walden." *See also*, Bradshaw, Millard, & Walden, *supra* note 258, text at note 2 (also stating, based on a study of European providers of cloud services, that "[i]n the case of large commercial or Government cloud contracts, such [terms and conditions] are likely to be negotiated and tailored to fit the specific requirements of the customer").

[290] Hon, Millard, & Walden, *supra* 289, at 85.

[291] *Id.* at 90, 91.

[292] *Id.* at 91.

[293] *Id.* at 92.

[294] Classen 5th ed., *supra* note 257, at 283.

[295] Bradshaw, Millard, & Walden, *supra* note 258, at 207.

[296] Rashbaum, Borden, & Beaumont, *supra* note 284, at 81.

[297] Foster, *supra* note 275, at 25.

[298] Dep't of Defense, *Best Practice for Negotiating Cloud-Based Software Contracts*, at 10 (2015), hereinafter referred to as "Dep't of Defense," http://www.esi.mil/contentview.aspx?id=549 (last accessed Feb. 24, 2017).

[299] *Id.*

[300] Rohrmann, *supra* note 260, at 43.

[301] Dep't of Defense, *supra* note 298, at 10.

security.[302] If an audit discloses flaws that are not corrected timely to a transit agency's satisfaction, the agreement should give a transit agency the right to terminate the contract.[303] The agreement should include provisions to mitigate the risk of a data breach, for example, by providing that data may not be shared with third parties or subsidiaries without a transit agency's prior written consent.[304] An agreement should provide for the protection of a transit agency's data[305] and for the backing-up and recovery of data.[306] A transit agency's agreement should specify required standards of performance and promised level of service by the CSP, that a CSP will comply with applicable laws on data security and notification of a data breach, and that a CSP will install the necessary and appropriate measures to prevent intrusions and viruses.[307] If a CSP agreement allows a CSP to use data for certain purposes, a transit agency should consider whether the use or uses are acceptable to the agency and/or its patrons.[308] As noted in part V.A with respect to contracts with vendors, a CSP contract should state whether a provider is entitled to retain and market a transit agency's data after contract termination.

An agreement should require a CSP to identify its employees, agents, contractors and/or subcontractors who may have access to a transit agency's data. A CSP agreement and/or a separate confidentiality agreement should obligate the CSP's employees, agents, contractors and/or subcontractors to protect the confidentiality of a transit agency's data.[309] A transit agency may want data to be stored in multiple locations.[310] A CSP contract should provide for the preservation of a transit agency's data or the return of data to the agency when requested, specify who is responsible for deleting data, and provide for an audit to verify the deletion of data.[311]

A transit agency may want a provision that permits the agency to terminate an agreement if a CSP changes the "features and functionality" of its services.[312] Because a CSP could delete a transit agency's data on the termination of a contract, an agreement should require that on termination, the CSP will protect the data and further authorize a transit agency to retrieve or transfer its data.[313] For example, an agreement could provide for the return or destruction of a transit agency data as follows:

> At any time during the term of this Agreement at the [Transit Agency's written] request or upon the termination or expiration of this Agreement for any reason, the Service Provider shall, and shall instruct all Authorized Persons to, promptly return to the [Transit Agency] all copies, whether in written, electronic or other form or media, of [Data] in its possession or the possession of such Authorized Persons, or securely dispose of all such copies, and certify in writing to the [Transit Agency] that such [Data] have been returned to the [Transit Agency] or disposed of securely. Service Provider shall comply with all [reasonable] directions provided by the [Transit Agency] with respect to the return or disposal of [Data].[314]

It is recommended that a CSP contract include *termination assistance services*,[315] meaning that a CSP must "continue performing its services for a specified period…[and] assist with the orderly transition either back to the customer or to a new vendor."[316]

As for other provisions, a CSP contract may credit an agency for a loss of service.[317] A contract may include an acceptable use provision to restrict how a transit agency may use the service.[318] Although an acceptable use provision usually prohibits the use of the system for unlawful acts, some CSP contracts reportedly prohibit other uses.[319] However, a CSP may want to be indemnified for any claim caused by a transit agency's use of the CSP's services.[320]

To protect the confidentiality of a transit agency's data, an agreement should state that there will be no monitoring of a transit agency's activity.[321] Some CSPs, however, may want to monitor activity to enforce a contractual provision governing what are acceptable uses of its services.[322]

E. Liability Issues and Indemnification

Scholars have found that the most difficult issue to negotiate for CSP contracts concerns a CSP's liability.

[302] *Id.*

[303] Rohrmann, *supra* note 260, at 44.

[304] Foster, *supra* note 275, at 25.

[305] Rohrmann, *supra* note 260, at 44.

[306] Dep't Of Defense Department, *supra* note 298, at 11.

[307] Bloomberg, *supra* note 263, at 3.

[308] *Id.* at 2.

[309] Rohrmann, *supra* note 260, at 42–43.

[310] *Id.* at 42.

[311] *Id.*

[312] Bloomberg, *supra* note 263, at 3.

[313] Bradshaw, Millard, & Walden, *supra* note 258, at 204.

[314] *See* Dana B. Rosenfeld & Alysa Zeltzer Hutnik, *Data Security Contract Clauses for Service Provider Arrangements (Pro-customer)*, at 15 (2011), The International Association of Privacy Professionals, https://iapp.org/media/pdf/resource_center/Rosenfeld_Hutnik_Contract-clauses_Service-provider.pdf (last accessed Feb. 24, 2017).

[315] Bloomberg, *supra* note 263, at 3.

[316] *Id.*

[317] Bradshaw, Millard, & Walden, *supra* note 274, at 213–14.

[318] *Id.* at 200–01.

[319] *Id.*

[320] *Id.*

[321] *Id.* at 207.

[322] *Id.* at 208.

For example, "[p]roviders' exclusion of liability, particularly for outages and data loss, [are] generally the biggest issue for users. Providers try to exclude liability altogether, or restrict liability as much as possible, because they provide commoditized services."[323] Although unlimited liability for smaller providers presumably is unrealistic, even providers willing to agree to unlimited liability may not be sufficiently creditworthy to absorb large losses.[324]

Users with bargaining power may be able to obtain "unlimited liability for defined types of breach or loss, notably breach of confidentiality, privacy or data protection laws, or breach of regulatory or security requirements such as breaches giving rise to regulatory fines."[325] The more common approach is to place a cap on liability, "sometimes with different caps for different types of losses, and often limited by reference to amounts paid by the user in total or over a period like a year, such as 100% or 125% of six months' fees."[326] Nevertheless, some users in the United States still refuse to contract with providers that attempt to limit or exclude liability.[327]

A CSP should agree to indemnify a transit agency if data are lost or destroyed because of a CSP's breach of contract, negligence, data breach, and/or violation of applicable law.[328] The definition of a material breach in an agreement should include a security breach.[329] An agreement should define what is an actual or suspected data breach[330] and specify when and how an agency will be informed of an actual or suspected data breach.[331] Although CSPs may attempt to limit their liability,[332] an agreement should authorize a transit agency to recover damages for a CSP's breach of contract, negligence, data breach, and/or violation of applicable law.[333] If a CSP agreement limits a CSP's liability to "direct damages," the term should be defined. A CSP may attempt to limit its damages to a multiple of the monthly payment for services under the agreement and impose a cap on its damages, neither of which may be acceptable to a transit agency.[334]

Because a contract may limit a CSP's responsibility to indemnify a transit agency solely to claims for infringement of a third party's IP rights, it is recommended that a CSP contract stipulate that a transit agency will be indemnified for other claims, including "violations of law…gross negligence, theft, fraud or other intentional misconduct, and…property damage," including a loss of data.[335]

VII. LIMITATIONS ON LIABILITY, INDEMNIFICATION, AND REPRESENTATIONS AND WARRANTIES

A. Limitations on Liability

Although liability issues usually concern a licensor's liability, a transit agency as a licensee will want to limit its liability as well.[336] There may be statutory remedies that should or should not be excluded by the parties' technology agreement; however, state statutes, such as the UCC, replace common law only when that is the legislature's clear intention.[337] In any case, from a licensee's perspective, an "agreement's liability structure should reflect the entire relationship of the parties as well as all sums paid by the licensee to the licensor."[338]

As would be expected, the courts have had to construe clauses in technology agreements that limit a party's liability. In *IHR Sec., LLC v. Innovative Bus. Software, Inc.*,[339] IHR Security, LLC (IHR) and Innovative Business Software, Inc. (IBS) entered into a data duplication agreement and a software license agreement. Because accounting software did not function as promised, IHR refused to pay IBS's invoices under both agreements. After IBS brought an action for breach of the agreements, IHR asserted that its liability was capped at $5,000 because of a limitation of liability clause in the license agreement. A Texas appeals court affirmed a trial court's decision that granted IBS's motion

[323] Hon, Millard, & Walden, *supra* note 289, at 94 (footnotes omitted).

[324] *Id.* at 96.

[325] *Id.* at 94–95 (footnotes omitted).

[326] *Id.* (footnotes omitted).

[327] *Id.* at 94.

[328] Foster, *supra* note 275, at 26.

[329] Bloomberg, *supra* note 263, at 3.

[330] *Id.* at 2.

[331] *Id.* at 1.

[332] Foster, *supra* note 275, at 26.

[333] *Id.*

[334] Bloomberg, *supra* note 263, at 2.

[335] *Id.* at 2–3.

[336] Classen 4th ed., *supra* note 195, at 100.

[337] Johnson, *supra* note 173, at 573.

[338] *Id.* at 98. *See also*, Matt Karlyn, *Taking a Closer Look at the Limitation of Liability Clause*, TECH TARGET (Feb. 2007), http://searchcio.techtarget.com/magazineContent/Taking-a-Closer-Look-at-the-Limitation-of-Liability-Clause (last accessed Feb. 24, 2017); Matt Karlyn, *How to Scope the Liability Clause in your Software License Agreement*, COMPUTER WEEKLY (April 4, 2008), http://www.computerweekly.com/news/2240022055/How-to-scope-the-liability-clause-in-your-software-license-agreement (last accessed Feb. 24, 2017); and Evan Brown, *Limitation of Liability Clause in Software License Agreement did not Excuse Customer from Paying Fees*, http://blog.internetcases.com/2014/05/07/limitation-of-liability-clause-in-software-license-agreement-did-excuse-customer-from-paying-fees/ (last accessed Feb. 24, 2017).

[339] 441 S.W.3d 474 (Tex. App. 2014).

for summary judgment and awarded the company a judgment for over $52,000. The thirty-page license agreement concluded in paragraph 8.6 with a sentence stating: "NOTWITHSTANDING ANYTHING TO THE CONTRARY, THE TOTAL DOLLAR LIABILITY OF EITHER PARTY UNDER THIS AGREEMENT OR OTHERWISE SHALL BE LIMITED TO U.S. $5,000."[340]

IHR argued that the sentence meant that "its liability under the entire license agreement, including its obligation to pay for the goods and services provided by IHR, is capped at a maximum of $5,000."[341] The court held, however, that the limitation did

> not purport to limit IHR's liability in the event it breaches the License Agreement by refusing to pay for goods and services provided by IBS.… To construe Paragraph 8.6 in the manner asserted by IHR would render meaningless all of the other provisions regarding fees and payment by IHR for goods and services rendered by IBS.[342]

A New Jersey court narrowly construed a limitation on liability clause in *Marbro, Inc. v. Borough of Tinton Falls*.[343] A third party defendant, Fellows, Read & Associates (FRA), sought to enforce a liability limitation in an engineering services contract against the Borough of Tinton Falls (Borough). A New Jersey court agreed that the courts in New Jersey traditionally have upheld contractual limitations of liability.[344] Nevertheless, the court held that the clause did not shield FRA from all potential liability for professional negligence. The liability cap of $32,500 was a sum that equaled FRA's total fee for services under the contract.[345] The court held that FRA would still be concerned about the consequences if it committed a breach of its contractual obligations because the amount of the cap was not a "minimal" one.[346]

Thirty-seven agencies responding to the survey reported that they obtained the contractual clauses that they wanted in their technology agreements on limitations on liability.[347]

[340] *Id.* at 478, 479.

[341] *Id.* at 479.

[342] *Id.* at 479–80.

[343] 297 N.J. Super. 411, 688 A.2d 159 (1996).

[344] *Id.*, 297 N.J. Super. at 417, 688 A.2d at 162 (citing Tessler and Son, Inc. v. Sonitrol Security Systems, 203 N.J. Super. 477, 497 A.2d 530 (N.J. App. 1985) and Midland Carpet Corp. v. Franklin Assoc. Properties, 90 N.J. Super. 42, 216 A.2d 231 (N.Y. App. 1966).

[345] *Id.*, 297 N.J. Super. at 418, 688 A.2d at 162.

[346] *Id.*

[347] *See* Appendix C, transit agencies' responses to question 14(a). Four agencies said that they had been unable to secure the clauses that they wanted. *Id.* One agency did not respond to the question. *Id.*

B. Indemnification

An indemnification clause is needed to require a licensor to defend a transit agency and to indemnify and hold it harmless for claims except those that the parties agreed to exclude.[348] As for a licensee's indemnification of a licensor, an agreement should be clear that a licensor is not to be indemnified for its own negligence: "The licensor controls its own actions not the licensee[;] thus, the licensee cannot be expected to insure the actions of the licensor."[349]

The courts have had to construe technology agreements' provisions for indemnification.[350] The case of *Eurofins Pharma US Holdings v. BioAlliance Pharma SA*[351] illustrates the importance of a party's full disclosure of all material facts before another party agrees to an indemnification clause or agreement. *Eurofins Pharma US Holdings* concerned a transfer agreement between Eurofins Pharma US Holdings (EPUSH) and Viralliance Inc. (VI) (collectively the Eurofins Group) and BioAlliance Pharma SA (BioAlliance) and Viralliance SAS (Viralliance; collectively the BioAlliance Group) to transfer IP from the BioAlliance Group to VI to commercialize IP in the U.S. market.[352] The transfer agreement stated that the IP did not infringe the rights of any third party and that there was no fact that could have a material adverse effect either on the VI company or the IP that had not been disclosed previously in writing by the BioAlliance Group.[353]

However, the record showed that Avenard, a director of VI and the former president and chief executive officer of BioAlliance, knew that Advanced Biological Laboratories (ABL) had alleged that BioAlliance had infringed two ABL patents.[354] Under the transfer agreement, Eurofins Group had assumed the indemnity obligations to Specialty Labs that were formerly assumed by the BioAlliance Group. The Third Circuit held, first, that under applicable Delaware law, a director's fiduciary duty includes a duty to disclose.[355] Second, the court held

[348] *See* Classen 5th ed., *supra* note 257, at 89.

[349] *Id.* at 93.

[350] Five Star Electric Corp. v. Federal Ins. Co., Case No. 602781/07, 2014 N.Y. Misc. LEXIS 2147, at *1, 2 (N.Y Sup. Ct., N.Y. County, May 6, 2014) (denying motion to dismiss two sureties' claim for implied indemnity arising out of an MTA contract), *aff'd in part, mod. in part, summary judgment denied*, 2015 N.Y. App. Div. LEXIS 3241, at *1 (N.Y. App. Div., 1st Dep't, Apr. 21, 2015).

[351] 623 F.3d 147 (3d Cir. 2010).

[352] *Id.* at 151.

[353] *Id.* at 152 (citation omitted).

[354] *Id.* at 153.

[355] *Id.* at 158.

that Avenard's failure to disclose the alleged patent infringement claim

> serve[d] BioAlliance Group's interest in avoiding its indemnity obligations to Specialty Labs, because BioAlliance Group knew that ABL had told it (BioAlliance Group) that Specialty Labs' use of the IP violated ABL's patents. It follows that Avenard, the co-founder and chief operating officer of BioAlliance, could have derived personal benefit from shifting the indemnification responsibility from BioAlliance Group to Eurofins Group.[356]

The Third Circuit reversed the district court's ruling dismissing the breach of fiduciary duty claim against Avenard.[357]

Thirty-six transit agencies responding to the survey stated that they were able to include indemnification clauses that they wanted in their technology contracts.[358]

C. Representations and Warranties

A licensor may be expected to provide various warranties, such as to protect a licensee for a licensor's misrepresentation of or failure to disclose a material fact.[359] Because a general warranty of function, that is, that the software will "work" is not sufficient,[360] a "licensee should insist that a licensor warrant that the software is fit for a particular purpose."[361] Moreover, because technology systems have become more interconnected to enable them to transfer or exchange data, a transit agency may insist that its agreement include a warranty that technology being acquired will interface with a transit agency's older and/or proprietary technology.[362]

Technology developers or vendors may include provisions, for example, in a supplementary contract document, on the reverse side of an invoice in small print, or in an accompanying file or document that precludes prior representations or warranties from being part of the parties' agreement. As discussed in part IV.B.5, representations prior to contract formation, if not actionable as contract claims, possibly may be actionable as tort or statutory claims. Transit agencies will want to be careful to preserve any precontractual representations and/or warranties that resulted in an agreement and/or that are part of an agreement. Transit agencies should be wary of any later invoices, amendments, or other contract documents or files that attempt to exclude a developer's or vendor's representations or warranties. Nevertheless, because of the economic loss doctrine, unless a transit agency's tort or statutory claim comes within one of the exceptions discussed in part IV.B.5, the agency may be unable to bring or join tort or other claims for anything other than for breach of contract.

The *Digitech Computer, Inc. v. Trans-Care, Inc.*[363] case illustrates the importance of verifying that a final agreement contains the parties' intended terms and conditions, including any representations and warranties that were part of the bargain. Digitech Computer, Inc. (Digitech) executed a software licensing agreement with Trans-Care, Inc. (Trans-Care). Although the initial proposal had included a requirement for a 90-day satisfaction guarantee, Digitech did not include the guarantee in the agreement it sent to Trans-Care that the latter executed. When Digitech sued for breach of contract, Trans-Care counterclaimed for fraud on the basis that Digitech had misrepresented that the contract included a 90-day satisfaction guarantee.[364] Nevertheless, applying Indiana law, the court held that Digitech had not agreed that Trans-Care had "an unqualified right to walk away after 90 days."[365]

In *Pinellas Suncoast Transit Auth. v. Mincom, Inc.*,[366] the Pinellas Suncoast Transit Authority (PSTA) entered into a contract with Mincom, Inc. (Mincom) for an integrated financial, administrative, transportation, and maintenance information system. PSTA brought claims against Mincom for breach of contract, breach of implied warranty, negligent misrepresentation, fraudulent inducement, and violation of the Florida Deceptive and Unfair Trade Practices Act. Although a federal court in Florida dismissed most of the claims, the court did not dismiss PSTA's claim for breach of express warranty.[367] Because PSTA's allegation that Mincom failed to repair defective software was an issue of material fact, the court held that a dismissal of the breach of warranty claim would be inappropriate.[368]

In *International Data Products Corp. v. United States*,[369] the Air Force terminated a contract for convenience with International Data Products Corp. (IDP) after IDP lost its status as a small entity under section 8(a) of the Small Business Act. The Federal Circuit held that the government's termination for convenience did not terminate IDP's obligations to provide warranty and upgrade services at no cost to the Air Force, because the services were

[356] *Id.* at 159.

[357] *Id.*

[358] *See* Appendix C, transit agencies' responses to question 14(b). Four agencies stated that they had not. *Id.* Two agencies did not respond to the question. *Id.*

[359] Classen 5th ed., *supra* note 257, at 76.

[360] Tollen, *supra* note 26, at 92.

[361] Classen 5th ed., *supra* note 257, at 77.

[362] APTA Report, *supra* note 1, at 1.

[363] 646 F.3d 413 (7th Cir. 2011).

[364] *Id.* at 416.

[365] *Id.*

[366] 2007 U.S. Dist. LEXIS 30018, at *1, 2 (M. D. Fl. 2007).

[367] *Id.* at *8, 10, 15.

[368] *Id.* at *10.

[369] 492 F.3d 1317 (Fed. Cir. 2007).

included in the cost of the equipment that the Air Force purchased from IDP, and because the contract did not require the Air Force to pay additionally or separately for warranty or upgrade services.[370]

Warranties, of course, may be disclaimed. In a case subject to New York law, including the New York UCC, *Shema Kolainu-Hear Our Voices v. ProviderSoft, LLC*,[371] the plaintiff alleged claims for breach of implied warranty of merchantability, implied warranty of fitness for a particular purpose, and express warranty, as well as other claims. The contract contained an "explicit disclaimer of all warranties."[372] In upholding the disclaimer, the court ruled that there was no "substantive unconscionability" that rendered the contract unenforceable.[373]

In responding to the survey, thirty-four agencies stated that they had secured the provisions that they wanted on a contractor's, developer's, licensor's, or vendor's representations and warranties.[374]

VIII. TECHNOLOGY CONTRACTS AND PROTECTION AGAINST CLAIMS ARISING UNDER STATE PRIVACY AND DATA-BREACH NOTIFICATION LAWS

A. Introduction

Transit agencies require that technology they procure will safeguard the data that transit agencies collect and use. Transit agencies, as other data-collectors or -processors, are concerned about their potential liability because of a data breach and the disclosure of their customers' personally identifiable information (PII) and other personal data. Although this part of the report briefly discusses privacy and security issues, they are addressed in detail in two recent Transportation Research Board legal publications.[375]

[370] *Id.* at 1322, 1323.

[371] 832 F. Supp. 2d 194 (E.D.N.Y. 2010).

[372] *Id.* at 200.

[373] *Id.* at 201–02.

[374] *See* Appendix C, transit agencies' responses to question 14(c). Six agencies said that they had been unable to secure the terms that they wanted. *Id.* Two agencies did not respond to the question. *Id.*

[375] Dr. Larry W. Thomas, LIABILITY OF TRANSPORTATION ENTITY FOR THE UNINTENTIONAL RELEASE OF SECURE DATA OR THE INTENTIONAL RELEASE OF MONITORING DATA ON MOVEMENTS OR ACTIVITIES OF THE PUBLIC, Legal Research Digest No. 71, National Highway Cooperative Research Program, Transportation Research Board of the National Academies of Sciences, Engineering and Medicine, Washington, D.C., 2016, https://www.nap.edu/read/23586/chapter/1 (last accessed Feb. 24, 2017), and Dr. Larry W. Thomas, LEGAL ISSUES CONCERNING TRANSIT AGENCY USE OF CUSTOMERS' ELECTRONIC PERSONAL DATA, Legal Research Digest No. 48, Transit Cooperative Research Program, Transportation Research Board of the National Academies of Sciences, Engineering and Medicine, Washington, D.C., 2017.

B. States Having Breach Notification Statutes That Apply to Government Agencies

All states, except Alabama, New Mexico, and South Dakota, have enacted laws requiring that notice be given to the public when there is a security breach involving personal data.[376] In at least twenty-three states, the breach notification statutes that apply to businesses and commercial entities also apply to government agencies.[377] Although some state privacy and data-breach notification laws provide for enforcement and civil penalties, in at least thirteen states and the District of Columbia, a person injured by a data breach has a private right of action.[378] However, at least four states exempt government agencies from "enforcement proceedings."[379]

Some of the statutory provisions regarding enforcement, such as for damages or a civil penalty, apply to an agency's failure to give notice of a security breach, whereas some provisions apply to any violation of the state's privacy act protecting personal information maintained by an agency. Of the states in which the breach notification laws apply to government agencies, the states differ regarding a right of action against government agencies for a violation of the statute. In some states, no action is permitted against government entities,[380] or there is no provision for a private right of action.[381]

C. Claims Against Transit Agencies for Privacy Violations

Some state privacy statutes allow a plaintiff to recover actual damages for a privacy violation caused

[376] *See* Security Breach Notification Laws, *See* NATIONAL CONFERENCE OF STATE LEGISLATURES, (April 12, 2017), http://www.ncsl.org/research/telecommunications-and-information-technology/security-breach-notification-laws.aspx (last accessed Feb. 24, 2017).

[377] *Id.*

[378] *See id.* (other citations omitted).

[379] HAW. REV. STAT. ANN. § 487N-2 (2016); FLA. STAT. ANN. § 817.5681 (2016); ME. REV. STAT. ANN. tit. 10, § 1349 (2016); and TENN. CODE ANN. § 47-18-2107 (2016).

[380] *See* HAW. REV. STAT. § 487N-3(a) (2016) and ME. REV. STAT. § 1349(2)(A) (2016) (stating that provisions on enforcement and for imposition of civil penalties for violations of Maine's statute on Notice of Risk to Personal Data are not applicable to the state).

[381] *See* GA. CODE ANN. § 10-1-910, *et seq.* (2016); 815 ILCS § 530/20 (2016) (no specific penalty found that applies to government agencies but a violation constitutes an unlawful practice under the Consumer Fraud and Deceptive Business Practices Act); IND. CODE § 4-1-11-2, *et seq.* (2016) (no provision located that permitted a civil action or imposed a civil penalty for a violation); and N.J. STAT. ANN. § 56:8-166 (2016) (although stating that it is "unlawful…to willfully, knowingly or recklessly violate sections 10 through 13 of this amendatory and supplementary act," no provision located authorizing a cause of action or imposing a specific civil penalty).

by a data breach.[382] Unless a state privacy law provides otherwise, in some states a transit agency may be held liable only for an *intentional* disclosure of a customer's PII or other personal data. Furthermore, in the event of an unintentional release of data, there may be a good faith defense, which also has been codified in some state statutes.[383]

A technology agreement between a contractor, designer, developer, licensor, or vendor should provide for a transit agency's indemnification for data breaches and privacy violations.

IX. FEDERAL AND STATE LAW APPLICABLE TO THE PROTECTION OF TRADE SECRETS

A. Defend Trade Secrets Act of 2016

The Defend Trade Secrets Act of 2016 (DTSA),[384] enacted on May 11, 2016, amended the Economic Espionage Act of 1996.[385] The purpose of the DTSA "is to make it more practical for trade secret owners... to secure effective judicial relief."[386] The DTSA defines an owner of a trade secret to be "the person or entity in whom or in which legal or equitable title to, or license in, the trade secret is reposed."[387]

The DTSA applies to a theft of trade secrets affecting interstate or foreign commerce. A theft is broadly defined to include anyone who knowingly and intentionally steals or otherwise without authorization converts a trade secret for a product or service for use in interstate or foreign commerce for the economic benefit of anyone other than the owner of a trade secret or conspires with others to commit an offense.[388] A violator is subject to a fine and/or imprisonment.[389] An organization violating the DTSA is subject to a fine of not more "than the greater of $5,000,000 or 3 times the value of the stolen trade secret…including expenses for research and design and other costs of reproducing the trade secret" that the violator avoided.[390] The DTSA also provides immunity for whistleblowers who disclose misconduct by others in violation of the Act.[391]

Prior to the enactment of the DTSA, civil damages for a theft of trade secrets could be sought only under state law, but the DTSA created a federal cause of action for misappropriation of a trade secret.[392] Under § 1836(b)(1) "[a]n owner of a trade secret that is misappropriated may bring a civil action…if the trade secret is related to a product or service used in, or intended for use in, interstate or foreign commerce."[393] Furthermore, § 1836(b)(2) authorizes an owner of a trade secret to apply for an order granting an *ex parte* seizure "of property necessary to prevent the propagation or dissemination of the trade secret that is the subject of the action."[394]

B. Uniform Trade Secrets Act

Technology acquired or developed by transit agencies may be protected as a trade secret under a state's Uniform Trade Secrets Act (UTSA) that applies to a misappropriation of trade secrets.[395] At least forty-seven states, the District of Columbia, and the U.S. Virgin Islands have adopted the UTSA.[396] Although a state may have adopted the UTSA with some variations, the UTSA is a model law that defines an owner's rights and remedies regarding trade secrets.

The *Restatement (Third) of Unfair Competition* states that "[a] trade secret is any information that can be used in the operation of a business or other enterprise…that is sufficiently valuable and secret to afford an actual or potential economic advantage over others."[397]

The UTSA defines a trade secret to include

> information, including a formula, pattern, compilation, program device, method, technique, or process, that:
>
> (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and
>
> (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.[398]

[382] Minn. Stat. § 13.08, subdiv. 1 (2016) and Ore. Rev. Stat. § 802.191(1) (2016).

[383] Iowa Code § 22.10(3)(b)(2) (2016).

[384] Pub. L. No. 114-153, 130 Stat. 376 (*codified* at 18 U.S.C. §§ 1832(b), 1833, 1835, 1836(b)–(d), 1839(3)-7)).

[385] Pub. L. No. 104-294, 110 Stat. 3488.

[386] James Pooley, *The Myth of the Trade Secret Troll: Why the Defend Trade Secrets Act Improves the Protection of Commercial Information*, 23 Geo. Mason L. Rev. 1045, 1058 (2016), hereinafter referred to as "Pooley."

[387] 18 U.S.C. § 1839(4) (2016).

[388] 18 U.S.C. § 1832(a) (2016).

[389] 18 U.S.C. § 1832(a)(5) (2016).

[390] 18 U.S.C. § 1832(b) (2016).

[391] 18 U.S.C. §§ 1833(b)(1)(A)–(B) (2016). *See* Pooley, *supra* note 386, at 1066, 1075.

[392] Claire Laporte & Emma S. Winer, *Congress Passes Sweeping New Legislation to Protect Trade Secrets*, 62 Prac. Law. 37, 37–38 (2016).

[393] 18 U.S.C. § 1836(b)(1) (2016).

[394] 18 U.S.C. § 1836(b)(A)(2)(i) (2016).

[395] Uniform Law Commission, *Uniform Trade Secrets Act*, hereinafter referred to as "UTSA," The National Conference Of Commissioners On Uniform State Laws, http://www.uniformlaws.org/Act.aspx?title=Trade%20Secrets%20Act (last accessed Feb. 24, 2017).

[396] UTSA, *supra* note 395.

[397] *Restatement (Third) of Unfair Competition*, 39 cmt. d (1995).

[398] UTSA, *supra* note 395, § 1(4).

To preserve a trade secret, the owner must be careful "to limit access to the information, and such information should only be disclosed in confidence."[399]

A claim may be available for misappropriation of a trade secret under either the UTSA or at common law.[400] Although a misappropriation of trade secrets is unlawful, "trade secret law does not create a right in the information itself."[401] An owner "has no proprietary interest in the information," and "'the public at large remains free to discover and exploit the trade secret through reverse engineering…or by independent creation.'"[402]

In *Sherman & Co. v. Salton Maxim Housewares, Inc.*,[403] the court stated that under the Michigan statute, a claimant would have to establish among other things whether the data in question amounted to trade secrets and whether the party against whom the claim is made had express or implied consent to disclose or use the data.[404] In *Sherman*, because Salton alleged that "Sherman took sales data constituting trade secrets and/or proprietary information under MCL section 445.1902(b)(ii)(A) and gave it to Salton's competitor…without Salton's consent," Salton's amended counterclaim stated a claim.[405]

In cases involving copyright infringement, the Copyright Act may preempt a claim for a misappropriation of a trade secret.[406] When "the line between trade secret and copyright protection becomes blurred…the possibility of preemption increases."[407] The issue of preemption depends on whether the essence of the claim for a violation of a state's trade secrets law is merely a claim for one's unauthorized copying of data or software.

In *Huckshold v. HSSL, LLC*,[408] the plaintiff had an agreement with HSSL, LLC (HSSL) to develop software for the tracking and maintenance of a customer database.[409] Another defendant, The Miller Group, Inc., allegedly copied the software from one of HSSL's computers in violation of an agreement between the plaintiff and HSSL. The court noted that a claim for misappropriation of trade secrets is preempted when the claim is based solely on copying, because the claim would be "qualitatively equivalent" to a claim for copyright infringement.[410] However, "claims of misappropriation of trade secrets that are based upon breach of an independent duty of trust or confidence to the plaintiff are qualitatively different than claims for copyright infringement[] and are not preempted."[411] Although the court held that the plaintiff's claim for misappropriation of trade secrets was not preempted, the plaintiff would "have to prove that the Software was a trade secret that was misappropriated by Miller from HSSL and that HSSL was under a duty to maintain the secret and limit its use. These are elements in addition to the copying required for a copyright infringement claim."[412]

Likewise, in *Therapeutic Research Faculty v. NBTY*[413] the court held that the alleged misappropriation by a subscriber of its username and password for the defendants' benefit was a violation of the UTSA adopted by California.[414] Moreover, the court held that the plaintiff could prevail on its claim by proving damages that were caused by the misappropriation or unjust enrichment.[415]

There also may be an issue of whether a state's trade secret law preempts other claims at common law. Section 7(a) of the UTSA provides that except as provided in subsection (b), it "displaces conflicting tort, restitutionary, and other law of this State providing civil remedies for misappropriation of a trade secret." However, the UTSA "does not affect: (1) contractual remedies, whether or not based upon misappropriation of a trade secret; or (2) other civil remedies that are not based upon misappropriation of a trade secret…."[416] Of course, when there is confidential information that is not a trade secret, a trade secret statute does not preclude other civil remedies for misappropriation of confidential information.[417]

---

[399] Lars S. Smith, *RFID and Other Embedded Technologies Who Own the Data*, 22 Santa Clara Computer & High Tech. L. J. 695, 724 (2006), hereinafter cited as "Lars Smith," and *Restatement (Third) of Unfair Competition*, 39 cmt. g (1995).

[400] *See* UTSA, *supra* note 395, § 1(2).

[401] Lars Smith, *supra* note 399, at 729 (citing Restatement (Third) of Unfair Competition, 39 cmt. c (1995)).

[402] *Id.* at 730 (footnote omitted).

[403] 94 F. Supp. 2d 817 (E.D. Mich. 2000).

[404] *Id.* at 821 (citing MCL § 445.1902(b)(ii)(A)).

[405] *Id.* at 822. *See* discussion of cases in part XI.B.3, *infra*, holding that certain records were not subject to disclosure under public disclosure laws because they were exempt as trade secrets.

[406] Jobscience, Inc. v. CVPartners, Case No. C13-04519 WHA, 2014 U.S. Dist. LEXIS 2741, at *13 (2014).

[407] Carole P. Sadler, *Federal Copyright Protection and State Trade Secret Protection: The Case for Partial Preemption*, 33 Am. U. L. Rev. 667, 668 (1984) (footnote omitted).

[408] 344 F. Supp. 2d 1203 (E.D. Mo. 2004).

[409] *Id.* at 1205.

[410] *Id.* at 1209 (citation omitted).

[411] *Id.* (citations omitted).

[412] *Id.*

[413] 488 F. Supp. 2d 991 (E.D. C.A. 2007).

[414] *Id.* at 999 (citing Fas Techs, Ltd. v. Dainippon Screen MFG., Co., Ltd., 2001 U.S. Dist. LEXIS 7503, at *1 (N.D. Cal. May 31, 2001) and Cal. Civ. Code §§ 3426.2 and 3426.3).

[415] *Id.* at 1000 (citations omitted).

[416] UTSA, *supra* note 395, §§ 7(a) and (b).

[417] Burbank Grease Servs., LLC v. Sokolowski, 294 Wis. 2d 274, 308, 717 N.W.2d 781, 798 (2006) (citing Wis. Stat. § 134.90(6)(a)).

X. TECHNOLOGY CONTRACTS AND PROTECTION OF A TRANSIT AGENCY'S RIGHTS UNDER THE COPYRIGHT LAWS

A. Introduction

A transit agency may choose to develop and own its technology; for example, it may engage an independent contractor to design software and related systems. Under 17 U.S.C. § 201(a) (2016), a "work" is one that is protected under the copyright laws that "vests initially in the author or authors of the work." Unless a contract provides otherwise, an independent contractor will hold the copyright in any software designed or developed for the agency. Thus, transit agencies should consider including a work product clause in their agreements with software designers, developers, or programmers so that transit agencies own the copyright in any work. One source states that agencies "should consider work product clauses in all their service contracts."[418]

Under 17 U.S.C. § 201(b), unless a signed contract provides to the contrary, a "work for hire" is a work for which an "employer or other person for whom the work was prepared is considered the author" and the owner of all rights in the copyright. Therefore, unless there is a contrary agreement, when software is developed by a transit agency's employee that is within the scope of his or her work, the software is a work made for hire and owned by the transit agency as the employer.[419] As one source confirms, "companies often own [intellectual property] their employees create within the scope of their duties."[420]

[418] Tollen, *supra* note 26, at 28. *See also*, Robert K. Huffman & Lynda T. O'Sullivan, *Uncharted Waters: State Contracting Terms and Conditions, Intellectual Property, and the Homeland Security Era*, 33 PUB. CONT. L.J. 163, 185–86 (2003), hereinafter referred to as "Huffman & O'Sullivan" (stating, for example, that Michigan's standard terms and conditions for procurement of information technology and professional services define the term work product as "any data compilations, reports, and any other media materials or other objects or works of authorship created or produced by the Contractor as a result of and in furtherance of performing the services required by this Contract" and that the "state's rights in the work product include the right to use and the right to authorize others to use for any purpose, regardless of the existence therein of preexisting work, materials, and/or development tools (unless specifically limited by the contract")).

[419] Classen 5th ed., *supra* note 257, at 207. *See also*, Moffat v. Acad. of Geriatric Physical Therapy, Case No. 15-CV-626-jdp., 2016 U.S. Dist. LEXIS 177209, at *1, 35 (W.D. Wis. Dec. 22, 2016) (stating that under common law principles of agency, the plaintiffs' contributions to course materials were made as Academy employees; thus, the works were works for hire under the Copyright Act).

[420] Tollen, *supra* note 26, at 175.

B. Technology That Is Copyrightable and Patentable

Software demonstrates characteristics of works that traditionally come within the protection of the copyright laws, as well as characteristics that may be patentable; thus, technology may have features that are subject to the copyright laws and the patent laws. In general, inventions with a function are patentable, whereas a work that conveys information or an image is copyrightable.[421] Although a patent requires that an inventor apply for a patent, a work that is copyrightable is protected as soon as the author or designer creates the work.[422]

C. Copyrightability of Digital Intellectual Property

IP law consists of patent, trademark, copyright, unfair competition, and trade secret law.[423] Copyright law applies to the protection of digital IP, because "virtual space consists mainly of text and images, and therefore, by its nature, makes copyright a powerful tool for determining ownership."[424] The copyright laws recognize three types of copyrighted works in which the copyright holder may have rights: the section 102(a) creative work, the section 103 compilation, and the section 103 derivative work.[425]

Only an author of an original "work," as defined in the Copyright Act, is entitled to copyright protection.[426] Copyright law balances an author's interest in receiving the benefit of a work with the public's interest in having access to the work.[427] The copyright laws derive from the U.S. Constitution that gives Congress the power to grant "Authors and Inventors the exclusive right to their respective Writings and Discoveries."[428] One does not have to be professionally licensed to be the author of an original work. Registration of a copyright is not required for an author to have a copyright in a work, because "copyright automatically inheres in a work the moment it is 'created,' which is to say 'when it is fixed in a copy…for the first time.'"[429] However, a

[421] Dennis S. Karjala, *The Relative Roles of Patent and Copyright in the Protection of Computer Programs*, 17 J. MARSHALL J. COMPUTER & INFO. L. 41, 45–46 (1998–99).

[422] *Id.* at 45.

[423] Daniel C. Miller, *Determining Ownership in Virtual Worlds: Copyright and License Agreements*, 22 REV. LITIG. 435, 438 (2003), hereinafter cited as "Daniel Miller."

[424] *Id.*

[425] L. Ray Patterson & Stanley F. Birch, Jr., *A Unified Theory of Copyright*, 46 HOUS. L. REV. 321, 332 (2009).

[426] 1 *Nimmer on Copyright* § 1-103.

[427] Daniel Miller, *supra* note 423, at 438.

[428] U.S. CONST. art. I, § 8, cl. 8.

[429] 1 *Nimmer on Copyright* § 7.16[A][1] (citation omitted).

copyright must be registered before an owner may bring an action for infringement.[430]

Whether a designer, for example, may hold a copyright in a work depends on the originality of the designer's work, as well as on whether the work is copyrightable under one of the classifications in section 102(a).[431] Architectural plans and drawings are copyrightable as "pictorial, graphic, [or] sculptural works"[432] and receive copyright protection as both technical drawings and as architectural works.[433] Whether a design is copyrightable depends on the originality of "the selection of [the] elements and in the coordination and arrangement of those elements into a design."[434] Also copyrightable are "audiovisual works."[435] Thus, a designer's original work is subject to and protected by the copyright laws.[436]

A computer program is protected under the Copyright Act as a "literary work."[437] Because of an amendment in 1980 to the Copyright Act, a definition of the term *computer program* is included in the section on copyrightable subject matter.[438] A computer program is protected from unauthorized copying as a literary work if the program satisfies the originality and fixation requirements of the Copyright Act.[439] Expression in a computer program is copyrightable, but the actual processes or methods embodied in a program are not.[440] An audiovisual program and the computer program that implements it are separately copyrightable.[441] An infringer may copy the audiovisuals or the underlying computer program;[442] thus, who owns a work and any derivative works depends on the copyright laws and any contract applicable to the creation of the work. With some exceptions as discussed in this report, under the copyright laws it is the creator of a work who has exclusive rights to the work, including the rights to derivative works.[443] For the most part, the default rules established by the copyright laws may be altered by a license or other agreement.

[430] *Id.* § 7.16[B][1][a]. Also, "[o]nce the plaintiff produces a copyright certificate he establishes a *prima facie* case of validity of the copyright and the burden of production shifts to the defendant to introduce evidence of invalidity." Fred Riley Home Bldg. Corp. v. Cosgrove, 883 F. Supp. 1478, 1481 (D. Kan. 1985) (citing Original Appalachian Artworks, Inc. v. Toy Loft, Inc., 684 F.2d 821, 826 (11th Cir. 1982)).

[431] Raghu Seshadri, *Bridging the Digital Divide: How the Implied License Doctrine Could Narrow the Copynorm-Copyright Gap*, 2007 U.C.L.A. J. L. & TECH. 3, Vol. 11, at P14 (2007) (explaining that the requirements of copyright ownership "include originality, copyrightability of the subject matter, compliance with statutory formalities, and transfer of rights") (citing Nimmer on Copyright § 13.01[A])).

[432] Eales v. Environmental Lifestyles, Inc., 958 F.2d 876 (9th Cir. 1992).

[433] Thomas v. Artino, 723 F. Supp. 2d 822 (D. Md. 2010). *See* Harvester, Inc. v. Rule Joy Trammell + Rubio, LLC, 716 F. Supp. 2d 428, 436 (E.D. Va. 2010) (stating that architectural drawings receive copyright protection under both 17 U.S.C. § 102(a)(5) ("pictorial, graphic, and sculptural works") and § 102(a)(8) ("architectural works"). *See also,* Dawn M. Larsen, *The Effect of the Berne Implementation Act of 1988 on Copyright Protection for Architectural Structures*, 1990 U. ILL. L. REV. 151 (1990) (stating that "[i]t is clear that copyright protects an architect's plans from direct copying to make another set of plans, but whether protection extends to the use of copyrighted plans to build a structure is less clear").

[434] David Shipley, *The Architectural Works Copyright Protection Act at Twenty: Has Full Protection Made a Difference?* 18 J. INTELL. PROP. L. 1, 23 (2010) (quoting Lindal Cedar Homes, Inc. v. Ireland, 2004 U.S. Dist. LEXIS 18878, at *1, 6 (D. Or. 2004) (noting that the AWCPA did not affect the protection of plans as pictorial, graphic, or sculptural works)).

[435] 17 U.S.C. §§ 102(a)(1) and (6) (2016).

[436] Christina Brunka, *The Drawing is Mine! The Challenges of Copyright Protection in the Architectural World*, 2011 U. ILL. J.L. TECH. & POL'Y 169, 184–85 (2011) (citing Meshwerks, Inc. v. Toyota Motor Sales U.S.A., 528 F.3d 1258 (10th Cir. 2008), *cert. denied*, 2009 U.S. LEXIS 727, at *1 (U.S., Jan. 21, 2009)), hereinafter cited as "Brunka."

[437] 17 U.S.C. § 101 (2016) and Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1249 (3d Cir. 1983).

[438] 17 USCS § 101 (2016). *See* M. Kramer Manuf. Co. v. Andrews, 783 F.2d 421, 432 (4th Cir. 1986) (footnote omitted); 1 *Nimmer on Copyright* § 2.04 [C][3] at 2–51 (stating that "[i]t is … firmly established that computer programs qualify as [a] work of authorship" subject to copyright protection); Brignoli v. Balch Hardy and Scheinman, Inc., 645 F. Supp. 1201, 1204 (1986) (stating that "[t]he great weight of authority indicates that computer programs are entitled to protection under copyright law") (citing Videotronics, Inc. v. Bend Electronics, 564 F. Supp. 1471, 1477 (D. Nev. 1983); Williams Electronics, Inc. v. Artic Int'l, Inc., 685 F.2d 870, 875 (3d Cir. 1982); and Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983), aff'd, 725 F.2d 521 (9th Cir. 1984)).

[439] Daniel Miller, *supra* note 423, at 448 and Apple Computer, Inc. v. Franklin Computer Corp. 714 F.2d 1240 (3d Cir. 1983). *See also, annot.*, Deborah F. Buckman, *Copyright Protection of Computer Programs*, 180 A.L.R. FED 1 (2002).

[440] As for processes, one writer observes that "[p]atent law, not copyright law, provides the traditional mode of protection for utilitarian works such as processes. Processes implemented by computer programs are patentable. The Patent and Trademark Office has issued a large number of patents claiming processes implemented by computer programs." Steven R. Englund, *Idea, Process, or Protected Expression?: Determining the Scope of Copyright Protection of the Structure of Computer Programs*, 88 MICH. L. REV. 866 (1990) at material accompanying notes 136–38 (footnotes omitted).

[441] *M. Kramer Manuf. Co.*, 783 F.2d at 441 (citation omitted).

[442] *Id.* at 445. "Copying is ordinarily, due to the lack of direct evidence, established by proof that the defendant had access to the plaintiff's work and produced a work that is substantially similar to the plaintiff's work." *Id.* (citation omitted).

[443] Dwight A. Larson & Kate A. Golden, *Construction Law: Entering the Brave, New World: An Introduction to Contracting for Building Information Modeling*, 34 WM. MITCHELL L. REV. 75, 89–91 (2007), hereinafter cited as "Larson & Golden."

D. Whether the Government May Have a Copyright in Digital Intellectual Property

1. U.S. Government

Under § 105 of the Copyright Act, copyright protection is not available for any work of the U.S. Government. Federal agencies do not have copyright protection for any work created by the government;[444] for example, the decennial census is not copyrightable.[445] However, the government may hold copyrights that are transferred to the government (including by an assignment or a bequest)[446] or when the government commissions a work prepared by an independent contractor.[447]

2. State and Local Governments

Whether a state or local agency may copyright a work is a matter of state law.[448] In response to the survey, five transit agencies stated that any technology that was developed for their projects in the previous five years was copyrightable.[449]

The Copyright Act does not preclude a government employee's work from being copyrightable by the state or its subdivisions.[450] At least twenty-eight states claim the right to copyright, "and state copyright claims are routinely made for some categories of state data…."[451] The majority rule appears to be that, unless prohibited by state law, state and local agencies may seek copyright protection for works prepared by their employees.[452] However, a work created for a transit agency by an independent contractor belongs to the independent contractor unless there is a work product clause in the agreement designating the transit agency as the owner of the work and copyright therein.[453]

E. Identification of the Owner in the Contract Documents

1. Author as Owner

The contract documents should address who owns the copyright in a work.[454] The contract documents also should specify the party having "the legal rights to reproduce, use, make derivative works, distribute, and publicly display" the work.[455] A transit agency may want an author or creator of a work to sign a disclaimer of interest or ownership so that the agency owns any later contributions to a work.[456] The General Services Administration maintains ownership rights in all data and deliverables provided to the organization.[457] In Maryland, a public agency's rights in technical data are covered by the agency's standard special conditions that are included in the agency's contract solicitation packages.[458]

2. Ownership of a Work Under the Work for Hire Rule

Under the work for hire provision of the Copyright Act, a copyright in a work prepared by an employee within the scope of his or her employment is owned by the employer.[459] The work for hire doctrine does

[444] 17 U.S.C. §§ 101 and 105 (2009).

[445] Robert Gellman, *Twin Evils: Government Copyright and Copyright-Like Controls over Government Information*, 45 Syracuse L. Rev. 999, 1003 (1995), hereinafter cited as "Gellman."

[446] 17 U.S.C. § 105.

[447] *See* Robert A. Gorman, Copyright Law 52, 60 (2d ed. 2006). *See also*, M. B. Schnapper Public Affairs Press v. Foley, 667 F.2d 102 (D.C. Dir. 1981), *cert. denied*, 455 U.S. 948, 102 S. Ct. 1448, 71 L. Ed. 2d 661 (1982).

[448] County of Santa Clara v. Superior Court, 170 Cal. App. 4th 1301, 1332, 89 Cal. Rptr. 3d 374, 397 (2009) (stating that some state laws "explicitly recognize the authority of public officials or agencies to copyright specific public records that they have created").

[449] *See* Appendix C, responses of Central Florida Regional Transportation Authority (LYNX), Jacksonville Transportation Authority, Shoreline Metro, Transit Authority of Northern Kentucky, and Washington Metropolitan Transit Authority to question 15(a). The Central Florida Regional Transportation Authority (LYNX) observed that the work for one of its projects was copyrightable "by the vendor, not by LYNX." Thirty-five agencies said that they had not had any copyrightable technology. Two agencies did not respond to the question. *Id.* No agency reported that it had registered a copyright. *Id.*, transit agencies' responses to question 16(a).

[450] County of Suffolk, New York v. First American Real Estate Solutions, 261 F.3d 179, 187 (2d Cir. 2001) (citations omitted).

[451] Gellman, *supra* note 445, at 1027 (footnote omitted).

[452] 17 U.S.C. § 201(b) (2016) ("In the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright.")

[453] *See* Huffman & O'Sullivan, *supra* note 418, at 185–86.

[454] Larson & Golden, *supra* note 443.

[455] *Id.* at 104.

[456] *E.g.*, by an independent designer, engineer, project manager, team, contractor, or subcontractor for a project. For the government to use copyrighted material, the government must have the copyright owner's consent. 4 *Patry on Copyright* § 10:73.

[457] Benson T. Wheatley & Travis W. Brown, *An Introduction to Building Information Modeling*, 27 Constr. Law. 33, 34 (2007).

[458] SGP – 7.04 Rights in Technical Data (provided by the Maryland Transit Administration).

[459] 17 U.S.C. § 201(b) (2016). See Raphael Winick, *Copyright Protection for Architecture after the Architectural Works Copyright Protection Act of 1990*, 41 Duke L. J. 1598, 1641 (1992) (quoting 17 U.S.C. § 201(b)), hereinafter referred to as "Winick," and James R. Sims III & Brett I. Miller, *A Blueprint for Understanding Copyright Ownership in Architectural Works*, 20 Franchise L.J. 52, 54 (2000), hereinafter cited as "Sims & Miller." A written agreement between an employer and an employee is not needed for the copyright to "vest" in the employer. John G. Danielson, Inc. v. Winchester-Conant Props., Inc., 186 F. Supp. 2d 1, 11 N 1 (D. Mass. 2002), *aff'd,* 322 F.3d 26 (1st Cir. 2003).

not apply when a work is created by an independent contractor. The work belongs to the independent contractor unless there is a signed agreement designating the work as one for hire.[460] In the absence of a written agreement to the contrary, an independent architect, consultant, designer, developer, engineer, or planner creating a work usually holds the copyright in any plans for a project.[461]

The foregoing rule is not affected by an owner's involvement or participation in a project, such as by furnishing ideas, preliminary drawings, sketches, or specifications for a project or by having control of a project.[462] The owner's involvement does not make the owner an author or co-author of the work.[463] Moreover, in the absence of contract, an owner of a project does not acquire a copyright in any work simply because the owner paid for the work.[464] Of course, a transit agency may provide as part of its contract that the agency either owns or is a joint owner of any copyright in a work or derivative work.[465]

3. Joint Authorship Rule

A party who is unable to claim a copyright in a work because of a work product clause or the work for hire rule "may turn to a theory of joint authorship."[466] As with the work for hire doctrine, under the joint authorship rule, unless otherwise provided by contract, an owner's involvement, simply by virtue of the owner's ownership of or participation in the creation of a work, does not render the owner a joint author. The issue of joint authorship is important because joint authors have an undivided, equal interest in a copyright regardless of the difference in their respective contributions.[467] Each co-owner may revise the work, make a derivative work, or publish an original or a revision of the work.[468]

Consultants, contractors, or subcontractors may make significant contributions to a work and consequently want to claim joint authorship of it. For there to be joint authorship, a work must be "'prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole.'"[469] In the absence of an agreement with a consultant or other developer of a work, for a transit agency to claim joint authorship of a work, the transit agency would have to establish both that it made an independently copyrightable contribution to a work and that the parties' intent was that they would be co-authors.[470] The intent to be joint authors is determined as of the time a work is created.[471]

There are at least two approaches to determining joint ownership, the first being whether a collaborator's contribution meets the originality test of authorship of an original work. Although the Copyright Act does not specifically require copyrightability of a collaborator's contribution,[472] the majority view is that a collaborator's contribution does not result in a joint work "'unless the contribution represents original expression that could stand on its own as the subject matter of copyright.'"[473] In other words, a purported joint author's contribution must be original and independently copyrightable. If the test for the creation of a joint work is a contribution's copyrightability,[474] then contributions that are

[460] Winick, *supra* note 459, at 1642 (citing Nimmer on Copyright § 5.03[B]). *See also*, Creative Non-Violence v. Reid, 490 U.S. 730, 109 S. Ct. 2166, 104 L. Ed. 2d 811 (1989) and Sims & Miller, *supra* note 456, at 54.

[461] Sims & Miller, *supra* note 459, at 55 and Hi-Tech Video Productions, Inc. v. Capital Cities/ABC, Inc., 58 F.3d 1093 (6th Cir. 1995) (holding that a travel video produced by a production company having control of a project was not a work made for hire under the copyright statute because the assistants who worked on the project were independent contractors, not employees).

[462] Norbert F. Kugele, *How Much Does it Take?: Copyrightability as a Minimum Standard for Determining Joint Authorship*, 1991 U. ILL. L. REV. 809, 810 (1991), hereinafter referred to as "Kugele" (citing Community for Creative Non-Violence v. Reid, 490 U.S. 730, 750 (1989)).

[463] *Id.* at 828 (citing Aitken, Hazen, Hoffman, Miller, P.C. v. Empire Construction Co., 542 F. Supp. 252 (D. Neb. 1982)).

[464] Brunka, *supra* note 436, at 179 and Sims & Miller, *supra* note 459, at 53 (citing 17 U.S.C. §§ 201(a) and (b)).

[465] Kugele, *supra* note 462, at 837 (footnote omitted).

[466] *See id.* at 810 (stating that under 17 U.S.C. § 201 a joint author is a joint owner of the copyright and thus entitled to all the privileges of copyright ownership).

[467] Sims & Miller, *supra* note 459, at 56 (quoting 17 U.S.C. §§ 101, 201(a)) and Erickson v. Trinity Theatre, Inc., 13 F.3d 1061 (7th Cir. 1994).

[468] Weinstein v. University of Illinois, 811 F.2d 1091 (7th Cir. 1987).

[469] Daniel Miller, *supra* note 423, at 458 (quoting 17 U.S.C. § 101).

[470] *Id.* (quoting Thomson v. Larson, 147 F.3d 195, 200 (2d Cir. 1998)).

[471] Fred Riley Home Bldg. Corp. v. Cosgrove, 883 F. Supp. 1478 (D. Kan. 1975) (holding that a firm and a builder did not intend to be co-authors at the time that the builder created the alleged derivative work).

[472] Kugele, *supra* note 462, at 821 (quoting 135 H.R. REP. NO. 1476, *reprinted in* 1976 U.S.C.C.A.N. at 5736).

[473] *Id.* at 819 (quoting Goldstein § 4.2.1.2, at 379.118).

[474] *Berman v. Johnson*, 518 F. Supp. 2d 791 (E.D. Va. 2007), *aff'd* 315 Fed. Appx. 461 (2009) (holding that a promoter and a film maker had intended to be joint authors and that the promoter's contributions to the film were independently copyrightable). *See* Kugele, *supra* note 462, at 840. Kugele argues that the copyrightability standard is only the "minimum threshold for determining intent" and that other factors should be considered, such as "the extent of the collaboration, the amount contributed in relation to the size of the entire work, and any express agreements that the parties have made between themselves."

not copyrightable are excluded in determining joint authorship even though the contributions "were important to the final product."[475]

The second approach is that joint authorship does not require a copyrightable contribution. Rather, joint authorship results when authors simply intend that their collaboration is joint.[476]

The issue of copyright ownership should be addressed by contract, because the evidence of intent to create a joint work does not have to be in writing. Moreover, an author's contributions do not have to be "qualitatively or quantitatively equivalent" or "prepared in similar ways or with any day-to-day contact with the other authors."[477] It is not necessary that the parties work together for there to be a joint work as long as their contributions are sufficiently complementary "to be embodied in a single work…."[478] The quantity and quality of the contributions do bear on the ultimate question of the parties' intent.[479]

F. FTA Rights in Data Involving Experimental, Developmental, or Research Work

FTA's IP rights clause (*IP clause* hereafter) on patent rights and rights in data is included as appendix A.16 to FTA's Best Practices Procurement & Lessons Learned Manual (BPP & LLM).[480] Appendix A.16 references 2 C.F.R. part 200 for which the Office of Management and Budget (OMB) has issued regulations and guidance for federal agencies on government-wide policies and procedures for the award and administration of grants and agreements.[481] Each federal agency that publishes regulations implementing OMB's guidance has a chapter in subtitle B of part 200.[482] Chapter XII of subtitle B sets forth the U.S. DOT's regulations for grants and agreements. Appendix A.16 also references 2 C.F.R. § 200.326, which provides that a non-federal entity's contracts must contain the clauses required by 2 C.F.R. part 200, Appendix II.[483]

In addition, Appendix A.16 references 37 C.F.R. part 401 on rights to inventions made by nonprofit organizations and small business firms under government grants, contracts, and cooperative agreements. Although "[c]ontractors are expected to use efforts that are reasonable under the circumstances to attract small business licensees…[w]hat constitutes reasonable efforts to attract small business licensees will vary with the circumstances and the nature, duration, and expense of efforts needed to bring the invention to the market."[484] Appendix A.16 states that if a recipient or subrecipient

> wishes to enter into a contract (or subcontract) with a small business firm or nonprofit organization for the performance of experimental, developmental, or research work under the FTA award, the recipient or subrecipient must comply with the requirements of 37 C.F.R. part 401….[485]

Recipients are encouraged to consult 37 C.F.R. § 401.3 for guidance on "appropriate" clauses to include in contracts with their contractors on the government's data and patent rights in federally funded projects. Section 401.3(a) states that "[e]ach funding agreement awarded to a small business firm or nonprofit organization…shall contain the clause found in § 401.14(a) with such modifications and tailoring as authorized or required elsewhere in this part. However, a funding agreement may contain alternative provisions…."[486]

FTA's data and patent requirements "flow down" to all third party contractors and their contracts

[475] Kugele, *supra* note 462, at 822 (citing David A. Gerber, *Joint Authorship Requirement Questioned by Courts*, Experts, Nat'l. L.J., at 24 (Apr. 30, 1990)).

[476] *Id.* at 825 (citing *Nimmer on Copyright* § 6.07, at 6-20 to 6-22).

[477] Winick, *supra* note 459, at 1644 (citing Edward B. Marks Music Corp. v. Jerry Vogel Music Co., 42 F. Supp. 859, 863–64 (S.D.N.Y. 1942), *aff'd*, 140 F.2d 266 (2d Cir. 1944); Ashton-Tate Corp. v. Ross, 916 F.2d 516, 522 (9th Cir. 1990) (joint authorship of a prior work not itself sufficient to make a developer a joint author of a derivative work); and *Nimmer on Copyright* § 6.03 ("The essence of joint authorship is a joint laboring in furtherance of a preconcerted design.").

[478] Kugele, *supra* note 462, at 815.

[479] *Id.* at 831 (quoting Eckert v. Hurley Chicago Co., 638 F. Supp. 699, 704 (N.D. Ill. 1986) (quotation marks omitted)).

[480] FTA, *Best Practices Procurement & Lessons Learned Manual*, at 1 (Oct. 2016), hereinafter referred to as "BPP & LLM," https://www.transit.dot.gov/funding/procurement/best-practices-procurement-manual (last accessed February 9, 2017).

[481] 2 C.F.R. § 1.100 (2016).

[482] 2 C.F.R. § 1.105(c) (2016).The section further explains that the federal agency "regulations in subtitle B differ in nature from the OMB guidance in subtitle A because the OMB guidance is not regulatory (Federal agency regulations in subtitle B may give regulatory effect to the OMB guidance, to the extent that the agency regulations require compliance with all or portions of the guidance)." *Id.*

[483] BPP & LLM, Appendix A.16, Patent Rights and Rights in Data, at A-1, hereinafter referred to as "BPP & LLM, Appendix A.16," manual located at https://www.transit.dot.gov/funding/procurement/best-practices-procurement-manual, (last accessed February 9, 2017). The appendix states in part that a "non-Federal entity's contracts must contain the applicable contract clauses described in Appendix II to the Uniform Rules (Contract Provisions for non-Federal Entity Contracts Under Federal Awards), which are set forth below."

[484] 37 C.F.R. § 401.7(a) (2016).

[485] BPP & LLM, Appendix A.16, *supra* note 480, at A-50.

[486] 37 C.F.R. § 401.3(a) (2016).

that come within the definition of a "research-type project under 37 U.S.C. § 401.2."[487] Moreover, a contractor must agree to include the clause's requirements "in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance."[488]

Appendix A.16 states that the IP clause is one that a recipient of federal funding "at a minimum… can include" in an IP agreement.[489] Although the reader will want to refer to the entire IP clause,[490] some key provisions are discussed briefly. The IP clause applies to a project funded by FTA for experimental, developmental, or research work purposes.[491] The IP clause provides that, unless FTA otherwise determines, a contractor

> performing experimental, developmental, or research work required as part of this Contract agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of the Contract, or a copy of the subject data first produced under the Contract for which a copyright has not been obtained.[492]

An agreement on intellectual and software license rights must be "finalized" prior to the execution of the agreement with a contractor that must include the "restrictions" in the IP clause. For example,

> [e]xcept for its own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of FTA, until such time as FTA may have either released or approved the release of such data to the public.[493]

Unless the federal government agrees to exercise more limited rights, the government "is entitled to a nonexclusive, royalty free license to use the resulting invention, or patent the invention" for the government's purposes.[494] The federal government "reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use for the federal government's purposes any subject data or copyright" subject to the IP clause.[495] Unless a copyright owner consents, the government may not extend its license to any other party to any subject data developed under a contract or extend any copyright rights purchased by a contractor using any FTA assistance.[496]

The government's rights apply to all "subject data" that are produced in performing a contract that is subject to FTA's requirements. The term *subject data* means "recorded information," whether or not copyrighted, that is delivered or specified to be delivered as required by a contract with a contractor.[497] The term includes computer software, standards, specifications, engineering drawings and associated lists, process sheets, manuals, technical reports, catalog item identifications, and related information but does not include financial reports, cost analyses, or similar information used for contract administration or performance.[498]

As long as a contractor identifies its data in writing "at the time of delivery of the Contract work," subject data do not include data incorporated into work for a project that a contractor developed entirely without federal assistance.[499] Until the FTA has released or approved the release of data to the public, a contractor is not permitted to publish or reproduce subject data, or authorize others to do so, without the FTA's written consent.[500]

The IP clause includes an indemnity provision:

> Unless prohibited by state law, upon request by the Federal Government, the Contractor agrees to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract.[501]

Furthermore, a contractor must "indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the *Federal Government*."[502]

G. Digital Millennium Copyright Act

In 1998, Congress enacted the Digital Millennium Copyright Act (DMCA).[503] The Act applies only to a work protected by the Copyright Act.[504]

[487] BPP & LLM, Appendix A.16, *supra* note 480, at A-50.

[488] *Id.* at A-52.

[489] *Id.* A-50.

[490] *See id.* at A-51.

[491] *Id.* at A-51.

[492] *Id*. at A-52, ¶ 2. When "experimental, developmental, or research work, which is the subject of this Contract, is not completed for any reason whatsoever, all data developed under the Contract shall become subject data as defined herein and shall be delivered as the Federal Government may direct." *Id.*

[493] *Id.* at A-51.

[494] *Id.* at A-50.

[495] *Id.* at 51, ¶ 1.

[496] *Id.* at A-51, ¶¶ 1(a)–(b).

[497] *Id*. at A-51.

[498] *Id.*

[499] *Id.* at A-52, ¶ 5.

[500] The restriction on publication does not apply to a contract with an academic institution. *Id.* at A-51.

[501] *Id.* at A-52, ¶ 3.

[502] *Id.* (emphasis supplied).

[503] Pub. L. No. 105-304, 112 Stat. 2860 (1998).

[504] 17 U.S.C. § 1201(a) (2016). Congress enacted the DMCA "to implement the World Intellectual Property Organization Copyright Treaty and…to better protect copyright in the digital age." Chamberlain Group, Inc. v. Skylink Technologies, Inc., 292 F. Supp. 2d 1023, 1034 (N.D. Ill. 2003).

A copyright holder may use digital rights management (DRM) technology to place a digital "fence" around any data provided, for example, to a requester of data.[505] First, "[c]opyright owners use two main types of existing technologies, known as 'watermarking' and 'fingerprinting,' to create digital identifications for their works...."[506] Second, "'DRM software may…provide copyright owners with control over the various excludable rights of copyright ownership, including…the ability to make copies of and redistribute the work.'"[507] The courts apply the DMCA to cases involving copyright infringement; the Act is not limited to matters solely involving the Internet.[508] However, the Act only creates causes of action; it does not create a new property right.[509]

Section 1201(a)(1) is the anti-circumvention provision of the DMCA. The section "prohibits a person from 'circumventing a technological measure that effectively controls access to a work protected under [Title 17, governing copyright].'"[510] It should be noted that individuals "who use such devices may be subject to liability under section 1201(a)(1) whether they infringe or not."[511] Thus, an element of the DMCA that a copyright holder must prove is that the circumvention was "undertaken 'without the authority of the copyright owner.'"[512]

There are various exceptions in the DMCA, for example, for nonprofit libraries, archives, and educational institutions.[513] The statute permits reverse engineering.[514] An important exception under the Act is that it does not prohibit the fair use of information, even if the information is unlawfully obtained under the Act.[515]

Sections 1201(a)(2) and 1201(b)(1) are the "anti-trafficking provisions" of the DMCA. The provisions prohibit trafficking "in devices that circumvent access controls in ways that facilitate infringement…."[516] The two anti-trafficking provisions differ in that

> subsection 1201(a)(2) covers those who traffic in technology that can circumvent "a technological measure *that effectively controls access* to a work protected under" Title 17, whereas subsection 1201(b)(1) covers those who traffic in technology that can circumvent "protection afforded by a technological measure *that effectively protects a right of a copyright owner* under" Title 17.[517]

Section 1202 of the DMCA concerns the protection of copyright management information and is "limited to components of technological measures" that protect a copyright.[518] For section 1202 to apply, "the information removed must function as a component of an automated copyright protection or management system;"[519] however, the section does not apply if there is a "failure to prove the knowledge or intent requirements for [a] violation."[520] It has been held that neither a logo nor a hyperlink comes within the protection of section 1202 of the DMCA, because neither is "a component of an automated copyright protection or management system…."[521]

Section 1203 of the DMCA provides for jurisdiction in a federal court and for remedies that include injunctive relief;[522] impoundment of any unlawful device or product[523] or its destruction;[524] damages, either actual or statutory;[525] and costs and attorney's fees in the discretion of the court.[526]

In *Ticketmaster L.L.C. v. RMG Technologies, Inc.*,[527] Ticketmaster, the copyright owner, brought an action against the defendant RMG Technologies, Inc., for developing and marketing an automated device that accessed and navigated Ticketmaster's web site in a manner that infringed Ticketmaster's copyrights and violated the accepted terms of use for its web site. The court granted Ticketmaster's

[505] Ira Bloom, *Freedom of Information Laws in the Digital Age: The Death Knell of Informational Privacy,* 12 RICH. J. L. & TECH. 9, text at notes 277–81 (2006), hereinafter cited as "Bloom."

[506] *Id.*, text at notes 277–81.

[507] *Id.* (footnote omitted).

[508] 17 U.S.C. § 1201(a)(2) (2016) and Chamberlain Group, Inc. v. Skylink Technologies, Inc., 292 F. Supp. 2d 1023 (N.D. Ill. 2003), *partial summary judgment granted*, 292 F. Supp. 2d 1040, 2003 U.S. Dist. LEXIS 20351, at *1 (N.D. Ill., Nov. 13, 2003), *aff'd*, 381 F.3d 1178 (2004).

[509] Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1192 (Fed. Cir. 2004).

[510] *Id.* at 1194 (quoting Universal City Studios v. Corley, 273 F.3d 429, 440–41 (2d Cir. 2001) (some internal quotation marks omitted)).

[511] *Id.* at 1195.

[512] *Id.* at 1193 (citation omitted).

[513] 17 U.S.C. § 1201(d) (2016).

[514] 17 U.S.C. § 1201(f) (2016).

[515] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 443–44 (2d Cir. 2001). "The legislative history of the enacted bill makes quite clear that Congress intended to adopt a 'balanced' approach to accommodating both piracy and fair use concerns, eschewing the quick fix of simply exempting from the statute all circumventions for fair use." *Id.* at 444 N 13 (citing H.R. Rep. No. 105-551, pt. 2, at 25 (1998)).

[516] Chamberlain Group, Inc., 381 F.3d at 1195.

[517] Universal City Studios, Inc., 273 F.3d at 441 (citations omitted) (emphasis in original).

[518] IQ Group, Ltd. v. Wiesner Publishing LLC, 409 F. Supp. 2d 587, 593 (D. N.J. 2006) (footnote omitted).

[519] *Id.* at 597.

[520] *Id.* at 593 (citations omitted).

[521] *Id.* at 598.

[522] 17 U.S.C. § 1203(b)(1) (2016).

[523] 17 U.S.C. § 1203(b)(2) (2016).

[524] 17 U.S.C. § 1203(b)(6) (2016).

[525] 17 U.S.C. §§ 1203(b)(3) and (c) (2016).

[526] 17 U.S.C. §§ 1203(b)(4) and (5) (2016).

[527] Ticketmaster L.L.C. v. RMG Technologies, Inc., 507 F. Supp. 2d 1096 (C.D. Cal. 2007), *later proceeding*, 536 F. Supp. 2d 1191 (C.D. Cal. 2008) (dismissing defendant's counterclaims).

motion for a preliminary injunction. Ticketmaster demonstrated that it was highly likely that the defendant's use of automated devices to access the Ticketmaster web site violated a provision in the web site's terms of use and that the defendant's use of Ticketmaster's web site was not a fair use.[528]

XI. TECHNOLOGY CONTRACTS AND PROTECTION OF A TRANSIT AGENCY'S RIGHTS UNDER THE PATENT LAWS

A. Patentability of Technology

A thorough discussion of the possible applicability of the patent laws to technology procured or developed by transit agencies is beyond the scope of the report;[529] however, section 101 of the Patent Law "is at the center of the debate over the patentability of computer programs…."[530] Section 101 provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[531] The section applies to "utilitarian inventions" for which "the guiding principle is that all useful things made by human ingenuity are patentable…."[532]

Patents for computer hardware have been less controversial than have patents for software or software-related inventions.[533] Many software patent cases deal with the issue of whether an invention or discovery that uses a mathematical algorithm is patentable under section 101.[534] In 1981, the U.S. Supreme Court held in *Diamond v. Diehr*[535] that computer-related inventions could be patented. However, as held by the Supreme Court in 2014 in *Alice Corp. Pty. Ltd v. CLS Bank International*,[536] an invention or discovery is not necessarily patentable simply because the invention or discovery involves the use of a computer.

At issue in *Alice* was whether a financial program used "to facilitate the exchange of financial obligations between two parties by using a computer system as a third party intermediary" was patentable.[537] The Court explained that patentable subject matter under section 101 does not include "[l]aws of nature, natural phenomena, and abstract ideas…."[538] If the courts upheld the patentability of an abstract idea, the courts "'would effectively grant a monopoly over an abstract idea.'"[539] However, "an invention is not rendered ineligible for [a] patent simply because it involves an abstract concept."[540] The computer program in *Alice* was not patentable because the method "merely require[s] generic computer implementation…."[541] The computer implementation was not a new and useful application of an idea for it to be patentable.[542] The Court held that a mere instruction to implement an abstract idea on a computer is not eligible for a patent.[543]

Since the *Alice* decision, in *Enfish, LLC v. Microsoft Corp.*,[544] the Federal Circuit held that the computer programs at issue were patentable because the programs "are directed to a specific improvement to the way computers operate" rather than to "a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool."[545] As the programs were not directed toward an abstract idea, the programs were patentable.[546]

In *JDS Techs., Inc. v. EXACQ Technologies*,[547] a federal court in Michigan held that defendant's patents for software, which were "directed at protecting against the unauthorized use of video surveillance software," were valid.[548] The patents were valid because the subject matter of the patents was not abstract. The process used a "'hardware address obtained from an accessible video server' to validate whether to permit particular software on a computer to display an image from that server."[549]

[528] *Id*. at 1117.

[529] Emily Michiko Morris, *What is Technology,* 20 B. U. J. Sci. & Tech. L. 24 (2014) (defining what patentable technology is); John Clizer, *Exploring the Abstract: Patent Eligibility Post Alice Corp. v. CLS Bank*, 80 Mo. L. Rev. 537 (2015); and University of Washington School of Law, *Copyright v. Patent: A Primer on Copyright and Patent Protection for Software* (explaining that both copyright and patent laws may apply to software).

[530] Burgunder, *supra* note 95, at 65. The author notes that 35 U.S.C. § 103 "essentially require[s] that an invention add something to existing knowledge that is not obvious to one who is skilled in the relevant field. *Id.* Section 171 covers design patents. *Id.*

[531] 35 U.S.C. § 101 (2016).

[532] Burgunder, *supra* note 95, at 65.

[533] Lemley, Menell, Merges, & Samuelson, *Software and Internet Law* 151 (2006), hereinafter referred to as "Lemley, Menell, Merges, & Samuelson."

[534] *Id.*

[535] 450 U.S. 175, 101 S. Ct. 1048, 67 L. Ed.2d 155(1981).

[536] 134 S. Ct. 2347, 189 L. Ed.2d 296 (2014).

[537] *Id.*, 134 S. Ct. at 2352, 189 L. Ed.2d at 302.

[538] *Id.*, 134 S. Ct. at 2354, 189 L. Ed.2d at 304.

[539] *Id.* (citation omitted).

[540] *Id.* (citation omitted).

[541] *Id.*, 134 S. Ct. at 2357, 189 L. Ed.2d at 307.

[542] *Id.*, 134 S. Ct. at 2357, 189 L. Ed.2d at 308 (citation omitted).

[543] *Id.*, 134 S. Ct. at 2358, 189 L. Ed.2d at 309.

[544] 822 F.3d 1327 (Fed. Cir. 2016).

[545] *Id.* at 1335–36.

[546] *Id.* at 1339.

[547] Case No. 15-10387, 2016 U.S. Dist. LEXIS 73622, at *1 (E.D. Mich. June 7, 2016).

[548] *Id.* at *2.

[549] *Id.* at *23 (citation omitted).

Transit agencies have been involved in patent litigation. For example, in response to the survey, the Toledo Area Regional Transit Authority reported that in 2013, there was an action against the agency alleging that the technology it used infringed a patent. The agency said that the action was decided in its favor, but provided no additional details.[550] In *Smart Systems Innovations, LLC v. Chicago Transit Authority*,[551] the plaintiff alleged that the Chicago Transit Authority (CTA) and three companies with which the CTA contracted to develop Ventra—the CTA's transit-fare collection system—infringed five Smart Systems's patents. A federal district court in Illinois held that

> the challenged patents fail to demonstrate the necessary inventiveness to overcome the fact that they are drawn to an invalidly abstract idea. That is not to say that enabling riders to quickly access mass transit using bankcards is not useful.…Yet, as the Supreme Court has counseled, "The Information Age...enable[s] the design of protocols for more efficient performance of a vast number of business tasks. If a high enough bar is not set when considering patent applications of this sort, patent examiners and courts could be flooded with claims that would put a chill on creative endeavor and dynamic change."…Simply applying the fundamental, abstract concept of paying with a bankcard to the transit context does not clear the bar.[552]

Although the *Alice* and *Smart Systems Innovations* cases imply that obtaining a patent on software or software-related inventions or discoveries may be difficult, the Patent and Trademark Office issues over 20,000 patents each year in software-related patent classifications.[553]

B. Patent Rights of the Federal Government and State Governments

The U.S. Code declares what the patent rights are that apply to discoveries and inventions made with government assistance or funding. Since Executive Order 10096 of 1950, the federal government has had the right, title, and interest to discoveries made during working hours by government employees using government resources or a discovery made by a government employee that bears "a direct relation to" or is made "in consequence of the official duties" of an employee.[554] The applicable rules presently are set forth in 37 C.F.R. part 501.[555]

State agencies, for example, those in California, Florida, Minnesota, New York, Texas, and Virginia, may file for patents.[556] In Florida, state agencies may own patents only with legislative authorization, whereas in New York individual agencies may decide whether to patent their inventions.[557] Only two transit agencies responding to the survey reported having developed a project in the previous five years that was patentable;[558] however, no agency stated that it had filed for and/or obtained a patent on any discovery or invention resulting from a technology project.

A transit agency should be aware of the possibility that technology it has acquired by license or otherwise, without the agency's knowledge, could infringe a copyright or patent. Although no cases were located for the report involving transit agencies, one case was located involving the Florida Department of Transportation (FDOT). *State Contracting & Engineering Corp. v. Condotte America, Inc.*[559] arose out of FDOT's contract with State Paving Corporation (State Paving) to construct sound barrier walls along the highway. After the contract was signed, an employee at State Paving "invented a new and more cost-effective sound wall system," which FDOT decided to use for all of its sound wall projects.[560] After State Paving obtained two patents for the new system, it demanded that

[550] *See* Appendix C, Toledo Area Regional Transit Authority's response to question 17.

[551] Case No. 14 C 08053, 2015 U.S. Dist. LEXIS 89628, at *1 (N.D. Ill. July 10, 2015).

[391] Verified Complaint at 17, *Hickox v. Christie et. al.*, Docket No. 2:15-cv-7647-KM-JBC (D.N.J Oct. 22, 2015).

[552] *Id.* at *22–23 (citation omitted).

[553] Lemley, Menell, Merges, & SamuelsonSamuleson, *supra* note 533, at 151. *See also*, James Besson and Robert Hunt, *The Software Patent Experiment*, Business Review, Federal Reserve Bank of Philadelphia (2004), https://www.researchgate.net/publication/5051757_The_software_patent_experiment.

[554] Exec. Order No. 10,096 ¶ 10096 ¶1(a) (1950), https://www.archives.gov/federal-register/codification/executive-order/10096.html (last accessed Feb. 24, 2017).

[555] 37 C.F.R. §§ 501.6(a)(1)(i)–(iii) (2016) state in part that "[t]he Government shall obtain, except as herein otherwise provided, the entire right, title and interest in and to any invention made by any Government employee…[d]uring working hours…[w]ith a contribution by the Government of facilities, equipment, materials, funds or information, or of time or services of other Government employees on official duty, or…[w]hich bears a direct relation to or is made in consequence of the official duties of the inventor."

[556] Bureau of State Audits, California State Auditor, *State-Owned Intellectual Property: Opportunities Exist for the State to Improve Administration of its Copyrights, Trademarks, Patents, and Trade Secrets*, at 8 (2000), hereinafter referred to as "State-Owned Intellectual Property," https://bsa.ca.gov/pdfs/reports/2000-110.pdf (last accessed on Feb. 24, 2017).

[557] *Id.* at 9.

[558] *See* Appendix C, responses of Transit Authority of Northern Kentucky and Tri-County Metropolitan District of Oregon, TriMet to question 15(b). Thirty-eight agencies reported that their projects had not developed any technology that was patentable. Two agencies did not respond to the question. *See id.*

[559] Case No. 97-7014, 2004 U.S. Dist. LEXIS 28600, at *1, 3 (S. D. Fla. Oct. 25, 2004). Although the opinion references other decisions in the case, the opinion discusses primarily a protracted dispute over the patent holder's attorney's fees.

[560] *Id.* at *4–5.

FDOT and its contractors pay royalties for their use of the system.[561] FDOT claimed it did not need to pay royalties and told its contractors not to pay the royalties because State Paving's value engineering change proposal vested FDOT with a license to use the system without royalties.[562] When State Contracting & Engineering Corporation (SCEC) later acquired State Paving, SCEC also acquired all right, title, and interest in State Paving's patents.[563]

In an action by SCEC against FDOT and its contractors for patent infringement, a jury rendered a verdict against the defendants for approximately $5.2 million.[564] The trial court also entered a permanent injunction that enjoined the defendants from infringing SCEC's patents.[565] An amended judgment that included pre-judgment interest increased the total judgment to $9.3 million.[566] FDOT eventually agreed to settle and pay SCEC $8.0 million.[567] Under the agreement, SCEC could "license its patents for the construction of sound wall projects for FDOT construction jobs and earn a license fee or royalty pursuant to any such license."[568]

C. Patents Developed With Federal Funding

In 1980, Congress enacted the Bayh–Dole Act (Bayh–Dole),[569] *inter alia*, "to use the patent system to promote the utilization of inventions arising from federally supported research or development" and "to encourage maximum participation of small business firms in federally supported research and development efforts…."[570] Bayh–Dole applies to procurement contracts, grants, and cooperative agreements that are funded by the government. Under the Act, a federal agency is any executive agency as defined in 5 U.S.C. § 105.[571]

Bayh–Dole defines the term *funding agreement* as any contract, grant, or cooperative agreement that any federal agency enters into with a "contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government."[572] The term *contractor* includes any person, small business firm, or nonprofit organization that is a party to a funding agreement.[573] The Act defines the term *invention* as "any invention or discovery which is or may be patentable or otherwise protectable" under 35 U.S.C. § 1, et seq.; however, the term *subject invention* under Bayh–Dole applies to "any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement…."[574]

Subject to other conditions and exceptions stated in § 202(c)(4), a contractor must disclose "each subject invention to the Federal agency within a reasonable time after it becomes known to contractor personnel responsible for the administration of patent matters" and "make a written election within two years after disclosure to the Federal agency… whether the contractor will retain title to a subject invention…."[575] The government "may receive title to any subject invention in which the contractor does not elect to retain rights or fails to elect rights within such times."[576] Federal regulations set forth the procedure for restricting a contractor's patent rights at the time of contracting.[577]

In as much as the Act applies to small business firms,[578] the statute provides that "[e]ach nonprofit organization or small business firm may, within a reasonable time after disclosure as required by paragraph (c)(1) of this section, elect to retain title to any subject invention…."[579] There are four situations, however, when a funding agreement may otherwise provide.[580] The situation that appears most likely to apply to FTA funding is the one for "exceptional circumstances when it is determined by the agency that restriction or elimination of the right to retain title to any subject invention will better promote the policy and objectives of this chapter…."[581]

[561] *Id.* at *5.
[562] *Id.*
[563] *Id.* at *6.
[564] *Id.* at *18.
[565] *Id.*
[566] *Id.* at *6.
[567] *Id.*
[568] *Id.*
[569] 35 U.S.C. §§ 200–211 (2016).
[570] 35 U.S.C. § 200 (2016).
[571] 35 U.S.C. § 201(a) (2016).
[572] 35 U.S.C. § 201(b) (2016).
[573] 35 U.S.C. § 201(c) (2016).
[574] 35 U.S.C. § 201(d) (2016).
[575] 35 U.S.C. §§ 202(c)(1) and (2) (2016).
[576] 35 U.S.C. § 202(c)(2) (2016). The Act also requires that "a contractor electing rights in a subject invention agree[] to file a patent application prior to the expiration of the 1-year period" in 35 U.S.C. 102(b), as well as in other countries where the contractor wants to retain title. 35 U.S.C. 202(c)(3) (2016). Under § 202(d), if a contractor does not elect to retain title to a subject invention, "the Federal agency may consider and after consultation with the contractor grant requests for retention of rights by the inventor subject to the provisions of this Act and regulations promulgated hereunder."
[577] *See, e.g.*, 37 C.F.R. §§ 401.3 and 401.14 (2016).
[578] A small business firm is one as defined in 15 U.S.C. 632, as well as in the Small Business Administration's implementing regulations. *See* 35 U.S.C. § 201(h) (2016).
[579] 35 U.S.C. § 202(a) (2016).
[580] *Id.*
[581] 35 U.S.C. § 202(a)(ii) (2016). Before a federal agency may exercise its rights, the agency must determine first that at least one of the conditions in §§ 202(a)(i) through (iv) exists, file a copy of its determination with the Secretary of Commerce, and proceed in the manner as further required by the section.

Although a contractor may elect to retain title to government-funded inventions, the government automatically obtains a license for inventions that are developed by reason of government funding. As set forth in § 202(c)(4), "[w]ith respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferrable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world…."[582] A funding agency has additional rights when certain conditions are established under § 203(a). For example, when a small business firm has acquired title in a subject invention under the Act, the federal agency under whose funding agreement the subject invention was made has the right to require a contractor, assignee, or exclusive licensee of the subject invention to grant a nonexclusive, partially exclusive, or exclusive license to a responsible applicant (or applicants) upon reasonable terms.[583] If a contractor, assignee, or exclusive licensee refuses, the federal agency may "grant such a license itself…."[584]

D. FTA's Requirements Involving Experimental, Developmental, or Research Work

As discussed in part X.F, the FTA's BPP & LLM, Appendix A.16, Patent Rights and Rights in Data, states that "[e]xcept in the case of an 'other agreement' in which the Federal Government has agreed to take more limited rights, the Federal Government is entitled to a nonexclusive, royalty free license to use the resulting invention, or patent the invention for Federal Government purposes."[585] Furthermore, the FTA has the right to:

1. Obtain, reproduce, publish, or otherwise use the data produced under a federal award; and

2. Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.[586]

FTA's requirements regarding patent rights and rights in data "flow down to all third party contractors and their contracts at every tier that meet the definition of a research-type project"[587] as described in 37 C.F.R. part 40—Rights to Inventions Made by Nonprofit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements.[588]

XII. WHETHER TRANSIT AGENCY DATA ARE SUBJECT TO THE FREEDOM OF INFORMATION ACT OR A FREEDOM OF INFORMATION LAW

A. Federal FOIA Issues

The purpose of the federal FOIA is to open the administrative process to public scrutiny,[589] disclosure being the dominant objective of the Act.[590] The law provides for full disclosure by an agency unless the information sought is exempt from disclosure under one of the Act's nine exceptions.[591] In general, the statute is interpreted broadly to permit access to official information so as to create a judicially enforceable public right to government information that otherwise would not be available for inspection. The term *agency* as used in the Act includes any government corporation or government-controlled corporation.[592] Furthermore, "the FOIA does not authorize an agency to restrict the use of information in the hands of a recipient."[593] A requester may obtain data, and in some jurisdictions, be able to re-use the data commercially or otherwise. One source has observed that when FOIA material is produced, the highest charges are imposed for records having a commercial use.[594]

B. State Freedom of Information Laws

1. Applicability to Government Data

All fifty states have enacted their own FOIA, Freedom of Information Law (FOIL), or equivalent open records law under which individuals may request and obtain records of state and local government agencies and departments.[595] State law must be consulted whenever a work or data are

[582] 35 U.S.C. § 202(c)(4) (2016).

[583] 35 U.S.C. § 203(a) (2016). However, a federal agency must determine, for example, that such "action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use" or "to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees…." 35 U.S.C. §§ 203(a)(1) and (3) (2016).

[584] *Id.* A federal agency also may exercise its right when "action is necessary because the agreement required by [35 U.S.C. § 204] has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section [35 U.S.C. § 204]." 35 U.S.C. § 203(a)(4) (2016).

[585] *See* BPP & LLM, Appendix A.16, *supra* note 480 (last accessed Feb. 24, 2017).

[586] *See id.*

[587] *See id.*

[588] 37 C.F.R. § 401.2 (2016).

[589] 5 U.S.C. § 552 (2016).

[590] *See, e.g.*, 5 U.S.C. § 552(a)(8) (2016).

[591] 5 U.S.C. §§ 552(b)(1)–(9) (2016).

[592] 5 U.S.C. § 552(f)(1) (2016).

[593] Gellman, *supra* note 445, at 1032 (citing Baldridge v. Shapiro, 455 U.S. 345, 350 N 4, 102 S. Ct. 1103, 1106 N 4, 71 L. Ed.2d 199, 206 N 4 (1982) (noting that there was no provision in the FOIA for releasing information but swearing all users to secrecy)).

[594] *Id.* at 1031 (citing 5 U.S.C. § 552(a)(4)(A)(ii)(I) (1988)).

[595] Bloom, *supra* note 505, text at note 11.

copyrightable. The reason is that how the laws "are drafted may affect the terms of a state's copyright interest or whether a state can be deemed to have placed its documents in the public domain."[596] One source suggests that by allowing the inspection of records, but limiting copying, it may be possible "to apply an open records law and still preserve a copyright interest;"[597] however, such an approach may have limited utility for "copyrighted compilations [that] are large in size and electronic in format…."[598]

In general, however, FOIAs or equivalent laws apply to government information and data in electronic form.[599] Under New York's FOIL, for example, all agency records must be released to a requester unless they fall under one of the specific exemptions stated in the law that are similar to those in the federal FOIA. Under New York's FOIL "any information kept, held, filed, produced or reproduced by, with or for an agency or the state legislature" constitutes a record.[600] A record may be in the form of a document, file, book, photograph, drawing, or computer disk or tape.[601] If a record does not exist at the time a request is made, it does not appear that an agency is required to create a record. However, "[a]n agency shall provide records on the medium requested by a person, if the agency can reasonably make such copy or have such copy made by engaging an outside professional service," and "[r]ecords provided in a computer format shall not be encrypted."[602] One of the exemptions under the New York law is for records that, "if disclosed, would jeopardize the capacity of an agency or an entity that has shared information with an agency to guarantee the security of its information technology assets, such assets encompassing both electronic information systems and infrastructures…."[603]

It has been held that a municipality may not avoid liability under its state's open records law through contracts, for example, with independent contractors responsible for collecting and maintaining and otherwise having custody of records on behalf of the municipality. *WIREdata, Inc. v. Village of Sussex*[604] involved Wisconsin's open records law and WIREdata's request to three municipalities to provide information about their property assessments, information that WIREdata conceded that it planned to market and sell to real estate agents and brokers.[605] The municipalities had contracted with private, independent contractor assessors to complete their property assessments. Two of the municipalities were asked to produce the data to the company in an "'electronic/digital' format."[606] WIREdata's initial request to the third municipality did not specify a format.[607] Thereafter, WIREdata asked the independent contractor assessors for the data they created and maintained in a computerized database.[608] The municipalities provided the data in a PDF format, a format that did not satisfy WIREdata for its intended use of the data.

Although the case involved a number of issues, the court held that under Wisconsin's open records law, a municipality's independent contractor assessor is not an authority within the meaning of the open records law; thus, the assessor was not a proper recipient of an open records request.[609] However, the municipalities could "not avoid liability under the open records law by contracting with independent contractor assessors for the collection, maintenance, and custody of property assessment records."[610] Because the municipalities had provided the information, albeit in a format that could not be manipulated and used as WIREdata desired, the municipalities were not liable under the open records law.[611]

The municipalities fulfilled their obligation when "they produced PDFs with the requested information and gave those files to WIREdata."[612] The court stated that

> despite the fact that the PDF files did not have all of the characteristics that WIREdata wished (that is, WIREdata could not easily manipulate the data), the PDF files did fulfill WIREdata's initial requests as worded. In addition, the records requested were offered to WIREdata, by all three municipalities, in written form shortly after its requests were made, demonstrating good faith efforts to satisfy such requests quickly.[613]

Furthermore, the Wisconsin Supreme Court disagreed

> with the court of appeals' statement that requesters must be given access to an authority's electronic databases to examine them, extract information from them, or copy

[596] Gellman, *supra* note 445, at 1035 (citing John A. Kidwell, "Open Records Laws and Copyright," 1989 Wis. L. Rev. 1021, 1030 (1989)).

[597] *Id.* at 1034.

[598] *Id.* at 1035.

[599] Bloom, *supra* note 505, text at note 13.

[600] N.Y. CLS Pub O § 86(4) (2016).

[601] *Id.*

[602] N.Y. CLS Pub O § 87(5)(a) (2016).

[603] N.Y. CLS Pub O § 87(2)(i) (2016).

[604] 310 Wis. 2d 397, 751 N.W.2d 736 (2008). *See also*, Jessica L. Farley, *Wisconsin Open Records Law after Wiredata: Still Viable to Protect Public Access to Information?*, 93 Marq. L. Rev. 1189 (2010).

[605] *WIREdata*, 310 Wis. 2d 407, 751 N.W.2d 741.

[606] *Id.*

[607] *Id.*

[608] *Id.*

[609] *Id.*, 310 Wis. 2d 437, 751 N.W.2d 755.

[610] *Id.*, 310 Wis. 2d 441, 751 N.W.2d 757.

[611] *Id.*, 310 Wis. 2d 443, 751 N.W.2d 758.

[612] *Id.*, 310 Wis. 2d 444, 751 N.W.2d 759.

[613] *Id.*, 310 Wis. 2d 446–47, 751 N.W.2d 760 (footnote omitted).

> them. … We share the DOJ's concern, as expressed in its amicus brief, that *allowing requesters such direct access to the electronic databases of an authority would pose substantial risks*. For example, confidential data that is not subject to disclosure under the open records law might be viewed or copied. Also, the authority's database might be damaged, either inadvertently or intentionally. We are satisfied that it is sufficient for the purposes of the open records law for an authority, as here, to provide a copy of the relevant data in an appropriate format.[614]

Thus, there is some authority that a requester may not be entitled to records in the format of the requester's choice. Moreover, state law must be consulted regarding whether a government or government agency may refuse to produce a database or other electronic information either because of an exemption under state law or because the statute does not require that the information be provided in such a format, possibly for security reasons.

2. Whether an End-User Agreement May Be Required Before Disclosing Government Data

One issue is whether a government transit agency may protect its data from disclosure under a FOIA or equivalent law or, if produced, prevent its data from being used for a commercial or other purpose. First, the cases discussed in the following paragraphs hold uniformly that even a copyrighted compilation (*e.g.*, a database) must be disclosed unless disclosure is precluded by a specific exemption. Second, in the cases located for this report, the courts required in every instance that a database be disclosed to a requesting party even if the requester had a commercial motive. Third, the cases are divided on the issue of whether a public agency may require a requester to sign a contract, *i.e.*, an end-user agreement, to preclude further distribution or use of a database by a requester or others.

In *Microdecisions, Inc. v. Skinner*,[615] involving Geographic Information Systems (GIS) maps, the court held that a county's property appraiser could not require prospective commercial users of the records created in his office to sign a licensing agreement as a condition to receiving the records.[616] Although the court did not hold that the county had a copyright in the GIS maps,[617] the court did hold that under Florida law, "the fact that a person seeking access to public records wishes to use them in a commercial enterprise does not alter his or her rights under Florida's public records law."[618] Even if there were a copyright in the GIS maps, the Florida public records law "overrides a governmental agency's ability to claim a copyright in its work unless the legislature has expressly authorized a public records exemption."[619]

In *County of Santa Clara v. The Superior Court of Santa Clara County*,[620] the county demanded, prior to furnishing its copyrightable GIS basemap to a requester under the California Public Records Act (CPRA), that the requester sign an end-user agreement. The county argued that the copyright laws protect its compilation of data as a "unique arrangement."[621] The court observed that state law determines whether a public official may claim a copyright in the works of government entities and that "'[i]n some states, statutes explicitly recognize the authority of public officials or agencies to copyright specific public records that they have created.'"[622] The court concluded, however, that although section 6254.9 "recognizes the availability of copyright protection for software in a proper case, it provides no statutory authority for asserting any other copyright interest."[623]

As for whether the county could demand that the requester sign an end-user agreement, the court noted that courts elsewhere had rendered conflicting decisions on the issue. However, the court, agreeing with the Florida court's decision in *Microdecisions*, ruled that the county as part of its disclosure under the CPRA could not require a requester to sign an end-user agreement. The court held that "end user restrictions are incompatible with the purposes and operation of the CPRA."[624] The court held that "[t]he CPRA contains no provisions either for copyrighting the GIS basemap or for conditioning its release on an end user or licensing agreement by the requester. The record thus must be disclosed as provided in the CPRA, without any such conditions or limitations."[625]

Similarly, in South Carolina there has been litigation concerning the state's freedom of information statute and to what extent a government agency must disclose information that it compiles. However, in contrast to the courts' decisions in *County of Santa Clara v. The Superior Court of Santa Clara County and Microdecisons, Inc., supra*, the South

[614] *Id.*, 310 Wis. 2d 447, 751 N.W.2d 760 (emphasis supplied).

[615] 889 So.2d 871 (Fla. 2d Dist. Ct. App. 2004).

[616] *Id.* at 872.

[617] *See id.* at 872 N 2.

[618] *Id.* at 875.

[619] *Id.* at 876 (citations omitted).

[620] 170 Cal. App.4th 1301, 89 Cal. Rptr. 3d 374 (2009), *modified*, 2009 Cal. App. LEXIS 274, at *1 (Cal. App., Feb. 27, 2009).

[621] County of Santa Clara, 170 Cal. App. 4th at 1331, 89 Cal. Rptr. 3d at 396.

[622] *Id.*, 170 Cal. App.4th at 1331, 89 Cal. Rptr. 3d at 397 (citation omitted).

[623] *Id.*, 170 Cal. App.4th at 1334, 89 Cal. Rptr. 3d at 399.

[624] *Id.*

[625] *Id.*, 170 Cal. App.4th at 1335–36, 89 Cal. Rptr. 3d at 400.

Carolina Supreme Court agreed that an end-user agreement could be required by the county.

In *George H. Seago, III v. Horry County*,[626] the county's geographic information department developed a digital database to combine several layers of information onto one digital photographic map of the county at a cost of $7.5 million.[627] A real estate company made a request for the digital photographic map for its web site for the use of its customers.[628] Later the company requested full-county coverage of certain GIS data. The county notified Seago that it claimed a copyright in the information and would provide it only if the requester paid a $100 fee and signed a licensing agreement restricting "any further commercial use without prior written consent."[629]

The Supreme Court of South Carolina agreed with the Second Circuit in *County of Suffolk, New York v. First American Real Estate Solutions*,[630] discussed as follows, that the county could obtain copyrights and that maps could be copyrighted to the extent they contained "original materials, research, and creative compilation."[631] Furthermore, the court held that the county could restrict the subsequent commercial distribution of the data requested by Seago pursuant to the copyright law.

> It does not violate FOIA for a public entity to copyright specially-created digital data and to restrict subsequent commercial use as long as the information is provided initially to the requesting person or entity. If an entity is allowed to copyright the specially-created data, it is logical that the governmental entity should be allowed to enact ordinances to restrict further commercial dissemination of the information in order to protect the copyright.[632]

The court remanded the case for a determination of whether a $100 fee violated FOIA "because there is no evidence regarding what the actual copying costs would be."[633]

County of Suffolk, New York v. First American Real Estate Solutions[634] involved an attempt by the county to copyright and control the redistribution of the county's official tax maps. Through a FOIL request, First American first obtained and then marketed copies of the tax maps and CD-ROM disks containing the maps without a license from or consent of the county. The Second Circuit stated that "states and their subdivisions are not excluded from protection under the Act" and unless they are prohibited from doing so by a specific state law, may seek to copyright databases under their control.[635] The court held that the state's FOIL did not abrogate the county's copyright in its tax maps, that the county could comply with its FOIL obligations while preserving its rights under the Copyright Act, that the county's tax maps had enough originality to withstand a motion to dismiss for failure to state a claim, and that the tax maps could not, as a matter of law, be deemed to be in the public domain since their inception.[636]

3. Whether Data Are a Trade Secret Not Subject to Disclosure

Transit agencies may acquire or develop technology to collect personal or other data. In *Dir., Dep't of Information Technology of the Town of Greenwich v. Freedom of Information Comm'n*,[637] the Supreme Court of Connecticut rejected the claim of the Department of Information Technology (DIT) that a disclosure of GIS data would reveal a trade secret for which the Connecticut statute provided an exemption:

> The requested GIS data in the present case, however, is readily available to the public, and, accordingly, it does not fall within the plain language of § 1-210(b)(5)(A) as a trade secret. As the trial court noted, *the GIS database is an electronic compilation* of the records of many of the town's departments. Members of the public seeking the GIS data could obtain separate portions of the data from various town departments, where that data is available for disclosure. *The requested GIS database simply is a convenient compilation of information that is already available to the public. The records therefore fail to meet the threshold test for trade secrets*.[638]

There is some older authority holding that trade secrets are not subject to disclosure under public records disclosure laws. In *State ex. Rel. Cummer v. Pace*,[639] the court held that records concerning the operation of the municipal docks and terminals of the city concerning, *inter alia*, the routing of property, were not subject to disclosure under the law providing for inspection of public records because the disclosure of

[626] 378 S.C. 414, 663 S.E.2d 38 (2008).

[627] *Id.*, 378 S.C. 419, 663 S.E.2d at 40.

[628] *Id.*, 378 S.C. 420, 663 S.E.2d at 41.

[629] *Id.*

[630] 261 F.3d 179 (2d Cir. 2001).

[631] George H. Seago, III, 378 S.C. at 424, 663 S.E.2d at 43.

[632] *Id.*, 378 S.C. at 424–25, 663 S.E.2d at 43 (citation omitted).

[633] *Id.*, 378 S.C. at 429, 663 S.E.2d at 46. The court also held that although federal district courts have original jurisdiction to hear any civil actions arising under any Act of Congress relating to copyrights, the "mere fact that a case concerns a copyright does not necessarily mean that the case comes within the exclusive jurisdiction of the federal courts," the court noting that many disputes over copyright ownership arise under state law. *Id.*, 378 S.C. at 426, 663 S.E.2d at 44.

[634] 261 F.3d 179 (2d Cir. 2001).

[635] *Id.* at 187.

[636] *Id.* at 195.

[637] 274 Conn. 179, 874 A.2d 785 (2005).

[638] *Id.*, 274 Conn. at 195, 874 A.2d at 795 (emphasis supplied).

[639] 121 Fla. 871, 164 So. 723 (1935). The Municipal Docks and Terminals, when acting as agents for shippers and consignees, would receive and deliver goods and collect and remit the agreed prices and keep records thereof.

such information would violate the Interstate Commerce Commission's rules protecting trade secrets.

In another but more recent case, the Supreme Court of Iowa held that computer data purchased by the legislature with public funds for use in legislative redistricting constituted a trade secret owned by the vendor that prepared it and was exempt from disclosure as a public record.[640] Finally, at least one court has held that a state's Public Records Act "protects a broader range of information than just that covered under the…definition [in] the Trade Secrets Act. The Public Records Act protects from disclosure documents in the hands of a public body 'which contain trade secrets or confidential commercial or financial information….'"[641]

In sum, the cases hold that electronic data are not necessarily protected from disclosure when requested pursuant to a FOIA, FOIL, or similar open records law. In two cases the courts held that, although the data had to be released, the government could restrict redistribution by requiring a requester to sign an end-user agreement. Unless there is a specific exemption, data compiled by the government is not protected as a trade secret from disclosure; however, information in the possession of the government that if released would reveal a third party's trade secrets may be protected from disclosure.

XIII. NEGOTIATING A BETTER PRICE FOR A TECHNOLOGY PROJECT

A. Transit Agencies' Authority to Negotiate a Better Price

In responding to the survey, thirty-one transit agencies stated that, even though they are subject to public procurement laws, their states allow an agency to negotiate a better price for a technology procurement.[642]

As one agency stated in its response, when a procurement must be conducted by competitive bidding, no negotiations are permitted.[643] However, another agency said that there may be negotiations when a single bid is received and that when using an RFP, negotiations are permitted with the highest ranked firm.[644] Other agencies referred to federal procurement guidelines and the use of RFPs and best value procurement.[645] The Norwalk Transit District observed that when RFPs are used the FTA allows for a best and final offer. Omnitrans explained that it

> is permitted [to] evaluate and compare factors in addition to cost in order to select the most advantageous offer. FTA C 4220.1F supports Best Value procurements for technology when the recipient bases its determination [on] which proposals represent the "best value" [based] on an analysis of the tradeoff of qualitative technical factors and price or cost factors.[646]

MARTA stated that depending on the technology, the Authority may "contract directly with a company and negotiate a contract that is in the best interests of the Authority…."[647] The MTA (Maryland) stated that under the Maryland Code of Regulations, the MTA may negotiate "on equivalent terms with all eligible vendors during Best and Final Offer prior to project award."[648]

B. State Statutes Authorizing Negotiation

Although one source states that when negotiating a technology agreement the key is "leverage,"[649] state and local laws regulate how state agencies may procure goods and services. One source argues that, although some states rely on a "rigid, rule-driven acquisition process," such "formalistic acquisition techniques…are a very poor fit when complex solutions are sought or where projects call for IT system implementation."[650]

Several state statutes were located for the report that permit negotiations when procuring technology. Section 6611 of the California Public Contract Code authorizes the use of a "negotiation process"[651] for which the legislature directed the Department of General Services (DGS) to "establish the procedures and guidelines…."[652] The procedures and guidelines are to include "a clear description of the methodology that will be used by the department to evaluate a bid

[640] Brown v. Iowa Legislative Council, 490 N.W.2d 551 (Iowa 1992).

[641] Caldwell & Gregory, Inc. v. University of Southern Mississippi, 716 So.2d 1120, 1122 (Miss. Ct. App. 1998) (citation omitted).

[642] *See* Appendix C, transit agencies' responses to question 18.

[643] *See* Appendix C, response of Go Transit to question 18.

[644] *See* Appendix C, response of Northeast Illinois Regional Commuter Railroad to question 18.

[645] *See* Appendix C, responses of Brockton Area Transit Authority, Capital Metropolitan Transportation Authority (citing "best value procurement"), Golden Empire Transit District, Los Angeles County Metropolitan Transportation Authority, and San Diego Metropolitan Transit System to question 18.

[646] *See* Appendix C, Omnitrans's response to question 18.

[647] *See* Appendix C, Metropolitan Atlanta Rapid Transit Authority's response to question 18.

[648] *See* Appendix C, Maryland Transit Administration's response to question 18.

[649] Tollen, *supra* note 26, at xiv.

[650] Robert S. Metzger & Lauren B. Kramer, *The Importance of Competitive Negotiations to State Information Technology Procurement*, 48 THE PROCUREMENT LAWYER 18 (2013), hereinafter referred to as "Metzger & Kramer," http://www.rjo.com/PDF/TheProcurementLawyer_Spring2013.pdf (last accessed Feb. 24, 2017).

[651] CAL. PUB. CONT. § 6611(a) (2016).

[652] CAL. PUB. CONT. § 6611(c)(1) (2016).

for the procurement of goods, services, information technology, and telecommunications."[653]

The DGS may use a negotiation process for contracts for goods, services, information technology, and telecommunications when the department finds that one or more of the following conditions exist:

> (1) The business need or purpose of a procurement or contract can be further defined as a result of a negotiation process.
>
> (2) The business need or purpose of a procurement or contract is known by the department, but a negotiation process may identify different types of solutions to fulfill this business need or purpose.
>
> (3) The complexity of the purpose or need suggests a bidder's costs to prepare and develop a solicitation response are extremely high.
>
> (4) The business need or purpose of a procurement or contract is known by the department, but negotiation is necessary to ensure that the department is receiving the best value or the most cost-efficient goods, services, information technology, and telecommunications.[654]

An unsuccessful bidder does not have a right to protest the results of the negotiating process but may file a petition for a writ of mandate as provided in section 1085 of the Code of Civil Procedure.[655]

Furthermore, when it is in the state's best interests, the DGS "may negotiate amendments to the terms and conditions, including scope of work, of *existing contracts* for goods, services, information technology, and telecommunications, whether or not the original contract was the result of competition, on behalf of itself or another *state agency*."[656]

Thus in California, state agencies may negotiate only "where it will enable the state to better define the 'business purpose or need' of a procurement; where it will assist the state in identifying different types of solutions to fulfill a known business need or solution; where the purpose of need is complex and the cost of a bidder's response is high; or where it will endure a 'best value' or 'most cost-effective's solution."[657]

A 2012 study of California's negotiation process concluded, however, first, that although the state "has a unique power to use a negotiations process," the state has been reluctant to use it.[658] Second, although the DGS issued guidelines as instructed, the guidelines "do not address crucial questions such as *when* should negotiations be utilized, *what* conditions or benefits justify negotiations, *how* negotiations can be used to encourage competition, or *why* negotiations will advance the State's needs or save it money."[659]

A North Carolina statute, applicable to all manner of public contracting, states that "[i]n recognition of the complex and innovative nature of information technology goods and services," the state's political subdivisions may contract for information technology as provided in the statute or other procedure available under North Carolina law.[660] Moreover, the law provides that contracts are to be awarded to the person or entity that submits the best overall proposal as determined by the awarding authority based on factors that are to be identified in a request for proposals.[661] North Carolina allows an "awarding authority" to "negotiate with any proposer in order to obtain a final contract that best meets the needs of the awarding authority."[662]

Section 279B.060 of the Oregon Revised Statutes applies to "competitive sealed proposals." Under the statute, "[a] contracting agency may solicit and award a public contract for goods or services…by requesting and evaluating competitive sealed proposals."[663] An RFP, *inter alia*, must describe the procurement and include all applicable contractual terms and conditions.[664]

Furthermore, as provided in an RFP, a "contracting agency may conduct site tours, demonstrations, individual or group discussions and other informational activities with proposers before or after the opening of proposals for the purpose of clarification…."[665] A contracting agency may use a method of selection that includes discussions leading to best and final offers (in which a contracting agency may not disclose private discussions leading to best and final offers), discussions leading to best and final offers (in which a contracting agency may not disclose information derived from proposals submitted by competing proposers), competitive simultaneous negotiations, or a combination of methods.[666] In Oregon, state agencies are specifically allowed to negotiate the statement of work, the contract price,

[653] *Id.*

[654] Cal. Pub. Cont. §§ 6611(a)(1)–(4) (2016).

[655] Cal. Pub. Cont. § 6611(d) (2016).

[656] Cal. Pub. Cont. § 6611(b) (2016) (emphasis supplied).

[657] Metzger & Kramer, supra note 650, at 22.

[658] Robert S. Metzger, *California's Use of Negotiations Authority for State Technology Contracts, A White Paper Produced for and in Conjunction with TechAmerica's California Procurement Committee*, at 1 (June 20, 2012), http://www.rjo.com/PDF/TechAmerica_Section_6611_White_Paper_20June2012_FINAL.pdf (last accessed Feb. 24, 2017).

[659] *Id.* at 6 (emphasis in original).

[660] N.C. Gen. Stat. § 143-129.8(a) (2016).

[661] N.C. Gen. Stat. § 143-129.8(b)(2) (2016).

[662] N.C. Gen. Stat. § 143-129.8(c) (2016). The statute states that "[n]egotiations allowed under this section shall not alter the contract beyond the scope of the original request for proposals in a manner that: (i) deprives the pro

[663] Or. Rev. Stat. § 279B.060(1) (2016).

[664] Or. Rev. Stat. §§ 279B.060(2)(c) and (h) (2016).

[665] Or. Rev. Stat. § 279B.060(7) (2016).

[666] Or. Rev. Stat. § 279A.065 and §§ 279B.060(8)(a)–(h) (2016).

and all other terms and conditions reasonably related to the RFP.[667]

In Wisconsin, competitive bidding is preferred unless it is determined "that competitive bidding is neither practical…nor in the best interests of the state."[668] Wisconsin's IT department may "[e]stablish master contracts for the purchase of materials, supplies, equipment, or contractual services relating to information technology or telecommunications for use by agencies, authorities, local governmental units, or entities in the private sector."[669]

C. FTA Guidance for Recipients on Third Party Contracting

FTA Circular 4220.1F on Third Party Contracting Guidance provides recipients and subrecipients with assistance on compliance with federal laws and regulations applicable to procurements funded by FTA.[670] However, statutory and regulatory changes, including the Fixing America's Transportation Act (FAST Act)[671] amendments to title 49, chapter 53, of the U.S. Code and revisions to the Uniform Guidance (a/k/a Super Circular), 2 C.F.R. part 200, have superseded the current version of Circular 4220.1F, as well as 49 C.F.R. parts 18 and 19.[672] OMB's Final Guidance became effective December 26, 2013.[673]

Readers will want to consult the FTA's new or revised Circular when it becomes available, and in the meantime, contact the FTA for assistance or clarification.

XIV. BEST PRACTICES FOR TECHNOLOGY CONTRACTING BY TRANSIT AGENCIES

A. Transit Agencies' Significant Technology Projects

Numerous transit agencies responding to the survey described technology projects within the previous five years that are particularly important.[674] The Alameda-Contra Costa Transit District identified one of its largest projects to date, the replacement of its CAD/AVL system.

> This $30M project will replace our first-generation CAD/AVL system implemented around the year 2000. We first developed a rough set of requirements based on our own experience with the first-gen system. We then competitively engaged a transit engineering firm to refine our draft requirements into a Scope of Work, which was issued as an RFI. Based on the responses received, we selected the three best firms and issued the final RFP to them. After an extensive review of their proposals, including site visits to several of their current customers and a BAFO round, we made a contract award to Clever Devices.[675]

The Louisiana Department of Transportation and Development/Public Transportation referred to its "Statewide Transit Tracking and Reporting System (STTARS) [that] is used by transit providers to record ridership data and vehicle usage. This information could be used to analyze data recorded by STTARS to illustrate the utilization and efficiency of Public Transportation in rural areas in the state of Louisiana."[676]

The Northeast Illinois Regional Commuter Railroad identified as a particularly important project its procurement for Positive Train Control (PTC) System Integrator Services, a global positioning system (GPS)-based safety system, which is designed to prevent train-to-train collisions and entry into work zones and over-speed derailments.[677]

B. Transit Agency Guidance and Best Practices for Technology Projects

One source recommends that agencies have "a quality assurance program to apply industry best

[667] Metzger & Kramer, supra note 650, at 21.

[668] State Bureau of Procurement (Wis.), *Competitive Bidding Policy,* The Procurement Process, State Procurement Manual, http://vendornet.state.wi.us/vendornet/procman/proc1.pdf (last accessed Feb. 24, 2017).

[669] Wis. Stat. § 16.972(2)(h)(2016).

[670] U.S. Dep't of Transp., Federal Transit Administration, *Third Party Contracting Guidance*, FTA C 4220.1F (Rev. March 18, 2013), https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/third-party-contracting-guidance (last accessed Feb. 24, 2017).

[671] Pub. L. No. 114-94, 129 Stat. 1312 (2016).

[672] BPP & LLM, *supra* note 480, at Preface N 1.

[673] Office Of Mgmt. & Budget, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, 78 Fed. Reg. 78589 (Dec. 26, 2013), https://www.federalregister.gov/documents/2013/12/26/2013-30465/uniform-administrative-requirements-cost-principles-and-audit-requirements-for-federal-awards (last accessed Feb. 24, 2017).

[674] *See* Appendix C, responses to question 19 of Capital Metropolitan Transportation Authority (identifying mobile ticketing and the implementation of innovative/emerging technology within a strict timeline), Connecticut Department of Transportation, Des Moines Area Regional Transit Authority (referring to its CAD/AVL system and its procurement and financial system), Greater Peoria Mass Transit District (identifying its project for telecommunication and high-speed fiber line RFP), Jacksonville Transportation Authority (referring to its ERP (Project Firefly), real-time passenger information, and CAD/AVL projects), Maryland Transit Administration (Bus Unified Systems Architecture project), San Diego Metropolitan Transit System (Nextfare System and SAP ERP/EAM projects), and Toledo Area Regional Transit Authority (identifying a project enabling the purchasing of fare passes using a cellular phone RFID/QR validation while on a bus).

[675] *See* Appendix C, Alameda-Contra Costa Transit District's response to question 19.

[676] *See* Appendix C, Louisiana Department of Transportation and Development/Public Transportation's response to questions 2 and 19.

[677] *See* Appendix C, Northeast Illinois Regional Commuter Railroad's response to questions 2 and 19.

practices to ensure [that] an entity's contracts meet the entity's internal standards and those of a prudent party."[678] Matters to consider include appropriate terms and conditions, peer review, audit compliance after contract execution, documentation of the process, and management of the relationship.[679] However, only ten transit agencies responding to the survey reported that their agency has developed written guidance and/or a set of best practices for their agency's technology contracting and projects.[680] The Connecticut Department of Transportation observed that although "[t]here are clear basic procurement rules…[t]here are some disagreements about how clear the technology procurement rules are and how they are interpreted."

Although the report studied state agencies, a California State Auditor's report on IP owned by California state agencies found that the agencies were "not sufficiently knowledgeable about the intellectual property they own."[681] More than half of the state agencies surveyed owned some form of IP but were unaware of the extent of their ownership.[682] The study discovered that "many state agencies have no written policies for intellectual property management."[683] Moreover, the agencies did not have guidance on when they could or should "capitalize on their intellectual property."[684] In fact, some agencies' contracts with contractors, much to the chagrin of the state auditor, gave the "contractors a free license to use or sell intellectual property" that the agencies had paid to develop.[685] Of five states' practices analyzed for the study (Florida, Minnesota, New York, Texas, and Virginia), only Virginia "has a comprehensive written policy that authorizes its state agencies to own and protect patents and copyrights."[686]

The study states that when an agency "does not know which items or processes it can protect or which rights it possesses under patent law, [the agency] may be unable to keep others from patenting items it rightfully owns."[687] In the absence of a policy, an agency may fail to "retain[] ownership of the rights to potentially patentable products or processes developed by its employees working on state time using state resources."[688] Although the study discusses an agency's need to know its rights under the patent laws, the same need for guidance pertains to other IP, *i.e.*, copyrights, trademarks, and trade secrets.[689]

The California study identifies subjects that a guidance or policy on technology contracting should address, including products that may be IP, whether created by employees or contractors; when and whether to protect products as IP; whether, whenever possible, copyrights or trademarks should be registered; when to allow others to use an agency's IP; the need for an inventory of IP; and when and whether to pursue claims for infringement of an agency's IP rights.[690]

CONCLUSION

Although acquisitions of technology are not unlike procurements of other types of goods and services, the type of technology and the nature and purpose of an acquisition affect an agreement's terms and conditions. Transit agencies also acquire technology through non-technology contracts, such as for construction projects or the purchase or lease of advanced technology vehicles.

To the extent not addressed in state or local procurement laws, or in a transit agency's technology agreement, disputes between a transit agency and a contractor, designer, developer, licensor, or vendor are likely to be decided under a state's law on contracts and torts. Even though the use of software was not foreseen at the time of the states' adoption of the UCC, the courts have applied Article 2 to disputes involving technology agreements, including to issues of contract formation, interpretation, performance, warranties, and remedies.

Under the UCC, a formal declaration or promise, as well as an oral or written communication, may create a warranty. Implied warranties may arise under the UCC simply because a transaction occurred. Two important implied warranties are the UCC's warranty of title and warranty against infringement. Transit agencies should be alert, however, to attempts by developers, vendors, and others to disclaim warranties in their agreements.

This report identifies issues and clauses for transit agencies to consider when drafting technology agreements; discusses the development of performance-based, functional, and technical specifications;

[678] Classen 4th ed., *supra* note 195, at 264.

[679] Classen 5th ed., *supra* note 257, at 511–23.

[680] *See* Appendix C, transit agencies' responses to question 20. The Louisiana Department of Transportation and Development/Public Transportation provided a link to http://www.doa.la.gov/Pages/ots/Procurement.aspx (last accessed Feb. 24, 2017). Twenty-nine agencies reported that they did not have written guidance or a set of best practices. *Id.* Three agencies did not respond to the question. *Id.*

[681] State-Owned Intellectual Property, *supra* note 556, at 1.

[682] *Id.*

[683] *Id.* at 2.

[684] *Id.*

[685] *Id.*

[686] *Id.* at 9.

[687] *Id.* at 18.

[688] *Id.*

[689] *Id.* at 5.

[690] *Id.* at 24.

and emphasizes the importance of new technology being able to interface with existing legacy or proprietary technology.

Because cloud computing and services differ from traditional licensing, typical technology agreements may not deal adequately with the risks that cloud computing presents. Privacy and security issues exist, in part, because a transit agency's data could reside anywhere in the world.

This report separately discusses limitations on liability, indemnification, and representations and warranties that may not be subject to the UCC. A technology agreement should reflect the parties' entire relationship. Therefore, transit agencies should be wary of clauses that limit the liability of a developer, licensor, vendor, or other supplier. An indemnification agreement should require any supplier of technology to defend and indemnify a transit agency and hold it harmless for claims except those that the parties agree to exclude.

Because a general warranty of function is not sufficient, a transit agency should insist that an agreement warrant that the technology is fit for its intended purpose; that it will interface with legacy or proprietary technology, if applicable; and that it will safeguard data that a transit agency collects and uses. A developer, licensor, vendor, or other supplier should agree to indemnify a transit agency for damages incurred because of data breaches and privacy violations caused or not prevented by the technology being purchased.

One branch of IP law is the law of trade secrets. Technology acquired or developed by transit agencies may be protected as a trade secret under the federal DTSA or a state's UTSA. To preserve a trade secret, an owner must be careful to limit access to the information, which should be disclosed only in confidence.

A second branch of IP law is the law of copyrights, which applies to digital IP. The majority rule appears to be that, unless prohibited by state law, state and local agencies may seek copyright protection for works prepared by their employees. In the absence of a contractual provision, because an independent contractor would otherwise own the copyright in a work for a transit agency, agencies should include a work product clause in their technology agreements so that they own the copyright in any works developed for them. With respect to experimental, developmental, or research work funded by the FTA, the federal government reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use for the government's purposes, any data, or copyright therein, that are subject to a funding agreement.

The third branch of IP law is patent law, which may apply to technology procured or developed by transit agencies. The purpose of Bayh–Dole is to promote the utilization of inventions and discoveries that result from federally supported projects, including experimental, developmental, or research work.

Electronic and other data collected by government-owned transit agencies may be subject to a state's FOIA or similar law and must be produced unless an exception applies. The cases are divided on whether an agency may require a requester to sign an end-user agreement to preclude further distribution or use of data provided to a requester.

Several state statutes were located for this report that permit negotiations with developers, licensors, vendors, and others when government agencies are procuring technology, such as section 6611 of the California Public Contract Code that authorizes the use of a "negotiation process." If permitted by state or local law, the FTA may permit the use of competitive proposals or RFPs under the conditions set forth in the FTA Circular on third party contracts noted in this report.

As one source recommends, agencies should have a quality assurance program for technology contracting. Best practices include having appropriate terms and conditions, peer review, audit compliance after contract execution, documentation of the process, and management of the relationship. It is recommended, when appropriate, that an agency's guidance or policy identify any IP that the agency owns.

APPENDICES

The following appendices are available online at www.trb.org by searching for TCRP LRD 51.

Appendix A: Transit Agencies Responding to the Survey
Appendix B: Survey
Appendix C: Summary of Transit Agencies' Responses to the Survey
Appendix D: Checklist of Clauses for Technology Contracts
Appendix E: Escrow Agreement
Appendix F: Nondisclosure/Confidentiality Agreement
Appendix G: Index to and Compendium of Transit Agencies' Contracts and Other Documents

ACRONYMS AND ABBREVIATIONS

ABL	Advanced Biological Laboratories
ADA	Americans with Disabilities Act
AVL	Automatic Vehicle Location
AVTA	Advanced Vehicle Testing Activity
BDA	Big Data Alliance
BPP	Best Practices Procurement (& Lessons Learned Manual)
CAD	Computer-Aided Dispatch
CCTV	Closed-Circuit Television
CIO	Chief Information Officers
COTS	Commercial-off-the-Shelf
CPRA	California Public Records Act
CRS	Congressional Research Service
CSP	Cloud Service Provider
CTA	Chicago Transit Authority
DAS	(Ohio) Department of Administrative Services
DGS	Department of General Services
DIT	Department of Information Technology
DMCA	Digital Millennium Copyright Act
DOT	Department of Transportation
DRM	Digital Rights Management
DTSA	Defend Trade Secrets Act of 2016
EPUSH	Eurofins Pharma U.S. Holdings
FAR	Federal Acquisition Regulation
FDOT	Florida Department of Transportation
FOIA	Freedom of Information Act
FOIL	Freedom of Information Law
FRA	Fellows, Read & Associates
FTA	Federal Transit Administration
GIS	Geographic Information System
GPS	Global Positioning System
IaaS	Infrastructure as a Service
IBS	Innovative Business Software, Inc.
IDP	International Data Products Corp.
IHR	IHR Security, LLC
IP	Intellectual Property
IT	Information Technology
ITS	Intelligent Transportation Systems
IVLU	Integrated Vehicle Logic Units
LLM	(Best Practices Procurement &) Lessons Learned Manual
MARTA	Metropolitan Atlanta Rapid Transit Authority
MCTS	Milwaukee County Transit System
MDT	Mobile Data (or Display) Terminal
MTA	Metropolitan Transportation Authority
OMB	Office of Management and Budget
PII	Personally Identifiable Information
PSTA	Pinellas Suncoast Transit Authority
PTC	Positive Train Control
RFI	Request for Information
RFP	Request for Proposal
SaaS	Software as a Service
SAC	System Automation Corp.
SCEC	State Contracting & Engineering Corporation
SEI	Superior Edge, Inc.
SIMS	Sign Information Management System
STTARS	Statewide Transit Tracking and Reporting System
TA	(Maryland) Transit Administration
TCP	Transfer Connection Protection
TVM	Ticket Vending Machine
UCC	Uniform Commercial Code
UCITA	Uniform Computer Information Transactions Act
UTSA	Uniform Trade Secrets Act
VAN	Vehicle Area Network
VBS	Vehicle Business System
VCM	Vehicle Component Monitoring
VI	Viralliance Inc.
VLU	Vehicle Logic Unit
VPN	Virtual Private Network
VITA	Virginia Information Technologies Agency
VOIP	Voice Over Internet Protocol
WMATA	Washington Metropolitan Area Transit Authority

ACKNOWLEDGMENTS

This study was performed under the overall guidance of TCRP Project Committee J-5. The Committee is chaired by **Sheryl King Benford**, Greater Cleveland Regional Transit Authority, Cleveland, Ohio. Members are **Rolf G. Asphaug**, Denver Regional Transportation District, Denver, Colorado; **Darrell Brown**, Darrell Brown and Associates, New Orleans, Louisiana; **Robert I. Brownstein**, AECOM, Baltimore, Maryland; **Teresa J. Moore**, South Florida Regional Transportation Authority, Pompano Beach, Florida; **Elizabeth M. O'Neill**, Metropolitan Atlanta Rapid Transit Authority, Atlanta, Georgia; **Robin M. Reitzes**, San Francisco City Attorney's Office, San Francisco, California; and **James S. Thiel**, Madison, Wisconsin. **Bonnie Graves** provides liaison with the Federal Transit Administration. **Jessica Chu** serves as the liaison with the Amalgamated Transit Union, and **Gwen Chisholm Smith** represents the TCRP staff.

Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The nation turns to the National Academies of Sciences, Engineering, and Medicine for independent, objective advice on issues that affect people's lives worldwide.
www.national-academies.org

Subscriber Categories: Data and Information Technology • Law • Public Transportation • Administration and Management

ISBN 978-0-309-44653-2

These digests are issued in order to increase awareness of research results emanating from projects in the Cooperative Research Programs (CRP). Persons wanting to pursue the project subject matter in greater depth should contact the CRP Staff, Transportation Research Board of the National Academies of Sciences, Engineering, and Medicine, 500 Fifth Street, NW, Washington, DC 20001.