

# CTS<sup>®</sup>-I Exam

## Candidate Handbook



Certified  
Technology  
Specialist-Installation



**infoComm**  
INTERNATIONAL<sup>®</sup>

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Preface

InfoComm International® is pleased to continue the growth in recognition, acceptance, and availability of the audiovisual (AV) professional Certified Technology Specialist™ (CTS®) certification program that is recognized worldwide as the leading AV specialist credential.

InfoComm's certification program is accredited through the International Organization of Standardization (ISO) and the International Electrotechnical Commission (IEC) ISO/IEC 17024 certification of personnel as administered in the United States by American National Standards Institute (ANSI). This accreditation achievement verifies compliance with requirements outlined in the internationally accepted standards for assessing personnel certification programs (ANSI/ISO/IEC 17024) and for the operation of accreditation bodies (ISO/IEC 17011).

The independent InfoComm Certification Committee, composed of professional audiovisual volunteers to guide and administer all aspects of the CTS certification program, administers the program. Computer-based exams are provided at testing centers worldwide, and are currently available in English, Spanish, and German. The exam development and delivery process are continually under review and improvement, utilizing subject matter experts under the guidance of professional exam development experts. This process enhances the level of credibility and defensibility of the CTS credentialing program. The agreement to abide by the CTS Code of Ethics and Conduct is now part of the initial application and a new Ethics and Disciplinary Committee investigates violations, issues sanctions as warranted, and publishes sanctions on the InfoComm website.

Many audiovisual specialist professionals have volunteered and contributed to this effort by serving on committees and other activities to meet the growing need for the CTS credential worldwide and to make the best AV certification program even better. The CTS Candidate Handbook online at [www.infocomm.org/cts](http://www.infocomm.org/cts) is an important part of these efforts.

For further information, please contact:

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200;  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)  
[www.infocomm.org](http://www.infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Table of Contents

<b>Preface</b> .....	<b>1</b>
<b>Table of Contents</b> .....	<b>2</b>
Introduction .....	4
Glossary of Candidate Handbook Terms .....	7
CTS-I Application and Exam Process Summary .....	8
<b>I. Detailed Exam-Related Information</b> .....	<b>10</b>
A. About the Exams .....	10
B. Acceptance Process.....	10
C. Professional Testing Centers and Locations .....	10
D. Exam Appointment Scheduling and Rescheduling Process.....	11
E. No-Shows or Late-for-Appointment Policies .....	11
F. Exam Application, Rescheduling, No-Show and Retesting Fees .....	12
G. Examination Withdrawal with Partial Refund of Fee.....	12
H. On the Day of the Exam.....	12
I. Hazardous Weather or Local Emergencies.....	15
J. Exam Security .....	15
K. Appeal Policies.....	15
L. Summary of Scoring Process .....	15
M. Cancellation of Scores.....	16
N. Special Accommodations for Exams .....	16
O. Retesting.....	17
<b>II. Application-Related Information</b> .....	<b>18</b>
A. CTS-I Eligibility Requirements .....	18
B. Auditing of Applications.....	18
C. Application Procedures .....	19
D. CTS Code of Ethics and Conduct and Disciplinary Policies.....	19
<b>III. Important CTS-I Certification Program Information</b> .....	<b>21</b>
A. Certification Committee's Position on Education .....	21
B. Certification Committee Statement of Non-Discrimination.....	21
C. Confidentiality.....	21
D. Opt-Out Policy.....	22
E. Trademarks and Copyrights.....	22
F. Address, Name or Contact Information Changes .....	22
G. Duplicate or Replacement Certificates .....	23
H. Verification of Credentials .....	23
I. Renewal Policy .....	23
J. Other InfoComm CTS Certification Program Recognition .....	24
<b>IV. Preparation and Education</b> .....	<b>24</b>
A. CTS-I Exam Content Outline Process.....	24
B. Preparation and Testing Tips for the Exam.....	25
C. CTS-I Exam Primary References.....	27
D. Other Reference Materials.....	27
E. Abbreviations/Glossary .....	28
F. Sample Questions .....	28
<b>Appendix A: CTS-I Exam Content Outline</b> .....	<b>30</b>
<b>Appendix B: CTS-I Exam Application</b> .....	<b>45</b>

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



<b>Appendix C: Special Accommodations .....</b>	<b>56</b>
<b>Appendix D: Healthcare Documentation.....</b>	<b>57</b>
<b>Appendix E: Code of Ethics and Conduct .....</b>	<b>59</b>
<b>Appendix F: Renewal Application.....</b>	<b>60</b>
<b>Appendix G: Retest Only Application .....</b>	<b>68</b>
<b>Appendix H: Sample Score Report - Pass .....</b>	<b>71</b>
<b>Appendix I: Sample Score Report - Fail .....</b>	<b>72</b>

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Introduction

Welcome to those interested in the InfoComm CTS-I® certification program. InfoComm has offered its certification program for more than 30 years and every year certifies more qualified AV professionals than anyone else in the industry. Individuals, companies, and customers have always recognized the CTS certification for its credibility and integrity.

A true certification program assesses individuals against peer-developed standards and competencies and provides a credential that is time limited. A certification exam assessment must be independent of any specific course or curriculum. In addition, continued competency is enhanced through ongoing renewal requirements and there must be adherence to a code of ethics.

InfoComm's independent Certification Committee is responsible for providing oversight to the development and administration of credible Certified Technology Specialist certifications (CTS, CTS-D®, and CTS-I), and to ensure the credentials meet high standards of ethical and professional practice for the audiovisual industry that assures the proficiency and competency of AV professionals.

ANSI/ISO/IEC 17024 accreditation of the CTS program provides many positive benefits for the CTS, CTS-D and CTS-I certification process:

- Defensible and reliable examinations
- Increased value of the CTS credentials
- Increased availability and recognition
- Ability to defend and protect the CTS credentials
- Increased security and confidentiality
- Increased professional acceptance and marketability of the CTS credentials
- Peer developed and reviewed with professional test development guidance

**InfoComm Certification Committee Mission Statement:** *To provide oversight to the development and administration of credible Certified Technology Specialist certifications (CTS, CTS-D and CTS-I), and to assure the credentials meet high standards of ethical and professional practice for the audiovisual industry that assures the proficiency and competency of AV professionals.*

**Definition of a Certified Technology Specialist Installation (CTS-I):** *Installs and maintains audiovisual systems by following specifications, schematics, codes, and safety protocols; administering installation process logistics; troubleshooting and problem-solving systems; maintaining tools and equipment; and communicating with clients, designers, other trades, other installers and staff to provide the best audiovisual solutions for client needs, on time and within budget.*

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



It is the policy of the independent InfoComm Certification Committee (the Certification Committee) to administer valid, reliable, defensible, and psychometrically sound examinations. To assist in this process, InfoComm has joined with two highly regarded professional testing service organizations that will assist in continuing to maintain and further enhance the CTS, CTS-I and CTS-D credentials, already recognized worldwide as the leading audiovisual specialist credentials. These companies are:

- **Professional Testing, Inc.**, of Orlando, Fla., a full-service provider of assessment and evaluation services for certification organizations and licensing agencies. Professional Testing provides psychometrically sound assessment services to ensure that tests achieve compliance with professional and accreditation standards. Professional Testing will be involved in all certification tests, the development of all certification exams and will conduct ongoing analysis of the performance of each exam to assure its validity and reliability as an assessment instrument.
- **Pearson VUE** was selected as the exam delivery company for all InfoComm certification exams. Pearson VUE has a network of approximately 400 testing centers worldwide, which offer reliable exam center proctoring, administration and candidate verification. All centers employ a secure, state-of-the-art computer network to deliver exams and manage data.

Successful achievement of a passing score on the exam is required for an individual to earn the CTS-I certification. Each candidate must demonstrate competence in the professional practices for the audiovisual industry commensurate with the standards established by the Certification Committee. In addition, all candidates and CTS-I certificants are required to abide by the CTS Code of Ethics and Conduct and all related InfoComm certification policies and procedures. For a further explanation of the exam development and scoring determination process, see the Summary of the Scoring Process ([Section L](#)- Detailed Exam Related Information) in this handbook.

This handbook describes all aspects of the credentialing process and assists in preparation for the exam. It contains:

- an overview of exam content (the exam content outline)
- admission policies
- guidelines for taking the exam
- an exam application
- suggested study resources
- pertinent facts about policies governing the exam

It also describes the content and procedures for all parts of the exam process. Sample questions and references are provided online at [www.infocomm.org/cts](http://www.infocomm.org/cts) to help familiarize candidates with the types of questions appearing on the comprehensive, multiple-choice exam.

**Note:** InfoComm's Certified Technology Specialists (CTSs), at all levels of certification, have demonstrated audiovisual technology knowledge and/or skills. Certified individuals adhere to a Code of Ethics and Conduct and maintain their status through continued education. Certification is not a guarantee for performance by certified individuals. Certification demonstrates commitment to professional growth in the audiovisual industry and is strongly supported by InfoComm.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation

---



All eligibility, application, score reports, special accommodation requests and general inquiries regarding InfoComm certification will be handled through the InfoComm International Certification Office, with headquarters located in Fairfax, VA, U.S.A.

Direct all inquiries to: InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[www.infocomm.org](http://www.infocomm.org)  
[certification@infocomm.org](mailto:certification@infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Glossary of Candidate Handbook Terms

**Blueprint:** Another term for the exam content outline.

**Certification Committee:** The InfoComm independent Certification Committee which InfoComm formed as an independent committee to provide oversight to the development and administration of the InfoComm certification program and has full responsibility for all policies and procedures pertaining to certification.

**Certification Office:** The InfoComm certification staff office that supports the InfoComm independent Certification Committee and its programs.

**Certification program:** Refers to a few or to all components associated with awarding a certification. That is, it may refer to the certification examination or to the full set of activities related to awarding and maintaining the credential. These activities include eligibility, examination, recertification, disciplinary action, governance, and policies.

**Certification test:** Typically, a voluntary exam program designed as criterion-referenced testing (CRT) that measures professional competence, and is sponsored by a non-governmental agency. This type of test may be targeted to measure entry-level professional skills, specialty skills within the profession or advanced skills in the profession.

**Code of Ethics and Conduct:** Canons or professional standards by which certificate holders must agree to uphold and abide. It is frequently an agreed-upon statement of principles and expected behavior and conduct of the certificate holders. Commonly referred to as codes of professional conduct, the canons are subject to enforcement, and certificate holders found in violation of the code of ethics may be subject to disciplinary procedures. Commitment to codes of ethics is a requirement for application to or awarding certification.

**Computer-based testing (CBT):** The mode of test administration in which items are presented to an examinee on a computer screen. Examinees typically indicate their responses by clicking with a mouse. This is an alternative to the more traditional paper-and-pencil testing method.

**DACUM:** Acronym for "Developing A CURriculum." This process develops a summary of what a worker does in terms of duties, tasks, knowledge, skills, traits and in some cases the tools the person uses. This information is then presented in a chart or table format.

**Domain:** The major categories of a certification test blueprint resulting from a DACUM.

**Exam Content Outline:** The term used most frequently to refer to the outline of domains and tasks identified as a result of the DACUM process. It provides the structure for the test forms to be developed. A typical exam content outline has a listing of the content areas to be included on the test, along with the cognitive levels that test items are intended to target.

**Good standing:** There are no current restrictions on a CTS certified individual due to Ethics and Disciplinary sanctions. Should an individual be currently under sanction, he/she is not considered to be in "good standing."

**Item:** Formal term used for "test question," since exam elements are frequently not structured as direct questions.

**Job task analysis (JTA):** A study that may be conducted to identify the knowledge, skills and abilities necessary for professional competence in a particular field. A job analysis is frequently conducted to determine the content and competencies that should be included in the certification or licensure exam.

**Psychometrician:** A professional who works in the field of psychometrics, or measurement. Specifically, psychometrics refers to the measurement of individuals' psychological attributes, including job-related knowledge, skills and abilities.

**Scheme:** Another word for exam.

**Subject matter expert (SME):** The term is used to refer to personnel deployed during different phases of the test development process. These individuals have extensive knowledge of the content and competencies assessed by the exam. SMEs are used in test development activities such as item writing, item review and standard setting.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## CTS-I Application and Exam Process Summary

Please note the following important steps in the application and exam administration process:

### Applying for the Exam

**Note:** CTS-I applications now require signature confirmation of meeting the experience eligibility requirements as detailed in the CTS-I application.

1. You must meet all eligibility requirements as of the date of the application.
2. You may apply for the CTS-I by using the application in this handbook or by downloading the most recent application from [www.infocomm.org/cts](http://www.infocomm.org/cts). Mail, scan and/or fax the application to the InfoComm Certification Office (see page 6) for review and subsequent approval.
3. Once your application is approved by InfoComm, notice of eligibility is sent to Pearson VUE and an email notification is sent to you from InfoComm within 10 business days regarding eligibility approval. Notification includes the required candidate ID number and scheduling information for the exam appointment from the list of available testing locations as found at [www.pearsonvue.com/infocomm](http://www.pearsonvue.com/infocomm) - Locate a Testing Center.
4. Applications will not be processed unless all required information on the application is completed and application fee is received.
5. You must provide phone and email contact information to facilitate email in receiving confirmation of receipt of application and any necessary phone contact during or following the exam.
6. Your application is approved for a period of 120 days from the date of the eligibility approval notice and you must arrange for **and be tested during** that 120-day period. The exam fee for applications must be paid by using a major credit card or by check at the time the application is submitted. Please see the fee schedule in Section F.

### Taking the Exam

7. Appointments for taking the exam can only be made with Pearson VUE Testing **after** approval and notification from InfoComm to you. The earlier you apply, the earlier you can be approved and make an appointment to obtain the date, time, and professional testing center location of your choice.
8. All requests for accommodations related to the Americans with Disabilities Act (or international equivalent) must be forwarded to the InfoComm Certification Office to be attached to your application. There are two forms required: Request for InfoComm Exam Special Accommodations, and Healthcare Documentation of Disability Related Needs. Both are found in this Candidate Handbook as [Appendix C](#) and [D](#).

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



**Note:** Request forms for Special Accommodations must be received at least 45 days prior to the preferred testing date.

9. You must submit all name and contact changes to the InfoComm Certification Office, which will then notify Pearson VUE of the changes.

**Note:** Name changes require documentation of court records.

10. The InfoComm CTS-I exam is multiple choice and is administered in a computer-based testing (CBT) format at established Pearson VUE professional testing centers worldwide. Locations of testing centers are found at [www.pearsonvue.com/infocomm](http://www.pearsonvue.com/infocomm).
11. You are required to bring two forms of valid ID, one of which must be a government issued photo ID with signature (*driver's license, government ID or passport*), with you to the testing center. (See *On the Day of the Exam*.)

**Note:** The first and last name on the photo ID must match exactly the name submitted in your application.

12. You will be asked to provide a digital signature and have your digital photo taken at the testing center as a part of the security process.
13. A score report is provided at the testing center upon completion of the exam. No results are provided over the phone. A sample "CTS Pass" score report is provided as [Appendix H](#) in this handbook. A sample "CTS Fail" score report is provided as [Appendix I](#) in this handbook. As appropriate, a certificate, pin, and other information will be sent via mail.
14. See [Section IV- Preparation and Education](#) for more detailed information about the exam.

## Rescheduling/Retesting

15. If you fail the exam, up to two retests are allowed by filing a Retest Form and submitting payment of a retest fee for each retest. Please see [Section F](#) for fees. You are allowed 120 days from the retest approval notification to complete each retest. There is a minimum waiting period of 30 days before retaking the exam. After two retest attempts, you must wait a period of 90 days before starting the application process again. This period allows you time to adequately prepare for the retest and prevents over-exposure to the exam.
16. Candidates must reschedule or postpone exam appointments (by contacting Pearson VUE, not InfoComm) no later than 24 hours prior to the testing appointment to avoid additional fees. Please see the fee schedule in Section F.
17. Requests for retests must be made to InfoComm (not to Pearson VUE) by completing and submitting the Retest Application with appropriate retesting fee.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## I. Detailed Exam-Related Information

### A. About the Exams

The exam presents each question with four response alternatives (A, B, C and D). One of these represents the single best response and credit is granted only for selection of this response. Candidates are currently provided 150 minutes for 110 questions, 10 of which are non-scoring pilot questions. There is a brief on-screen computer-based tutorial just prior to starting the exam and a brief online survey at the end of the exam. The time allotted to complete the tutorial and survey is in addition to the 150 minute exam time. (Also see [Section IV- Preparation and Education](#).)

It is the policy of the Certification Committee that all certification examinations will be developed utilizing a psychometrically valid process. The exam questions are based upon a Job Task Analysis from which the Exam Content Outline is created, which can be seen in this handbook as [Appendix A](#) or a more detailed copy of the complete Job Task Analysis can be found at [www.infocomm.org/cts](http://www.infocomm.org/cts). Questions are written in a format that evaluates a candidate's ability to perform the job tasks as listed in the Exam Content Outline rather than solely on the basis of knowledge recall or memorization of facts. Candidates are strongly encouraged to review this CTS-I Job Task Analysis information as they consider applying and preparing for the CTS-I exam.

Exam questions are written by individuals certified as CTS-I or deemed otherwise as subject matter experts, reviewed and validated by both test development experts and other subject matter experts. As with other professional credentialing exams, the exact questions cannot be revealed; however, the Exam Content Outline, primary references, and tips on how to prepare are available in this handbook and online at [www.infocomm.org/cts](http://www.infocomm.org/cts).

### B. Acceptance Process

If your application is approved for eligibility, an eligibility acceptance letter will be emailed to you by InfoComm within 10 business days of InfoComm receiving the completed application package with payment. The letter will contain proof of acceptance, your unique candidate ID number, contact information to schedule the testing appointment with Pearson VUE and additional information.

CTS-I applications require CTS certification, minimum of two years of audiovisual experience and signature verification of specific skills or education as listed in the CTS-I application found as [Appendix B](#) in this handbook and online at [www.infocomm.org/cts](http://www.infocomm.org/cts). Candidates must be at least 18 years old or otherwise of legal age to work in the jurisdiction of residence at the time of submitting the application. It is strongly recommended that candidates have the skills and experience as indicated in the Exam Content Outline ([Appendix A](#)). Applications that are incomplete or for which payments have been denied will delay approval. If the application is not accepted, a letter of explanation will be emailed to the applicant. Please be sure to include all required documentation with your application to avoid denial and/or delay.

### C. Professional Testing Centers and Locations

InfoComm exams are administered through the professional testing company, Pearson VUE, which provides state-of-the-art testing centers and services in the United States and internationally. All levels of CTS exams are now computer-based tests (CBTs). Pearson VUE testing centers incorporate state-of-the-art security and professionally designed testing environments.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



**Note:** The physical addresses of all Pearson VUE testing centers are available at [www.pearsonvue.com/infocomm](http://www.pearsonvue.com/infocomm) - Locate a Testing Center.

Applicants are strongly encouraged to make sure they know the exact location and physically travel to the exam site prior to the exam date to prevent getting lost and arriving late. In addition, it is strongly recommended that extra time be allowed in the event of unforeseen circumstances such as a traffic delay, flat tire and weather conditions. Plan your trip to arrive at least 30 minutes before your appointment. **No-shows or late arrivals (considered as no-shows) will NOT be admitted, and will result in an additional fee and a requirement to reschedule as described under No-shows or Late-for-Appointment policies below.**

## D. Exam Appointment Scheduling and Rescheduling Process

An approved candidate's information is sent from InfoComm to Pearson VUE at the time the eligibility approval email is sent to the candidate. The candidate may then contact Pearson VUE after 24 hours from receipt of the eligibility approval to schedule the testing appointment. Candidates who are approved for testing have a 120-day window from the date of the eligibility approval notice to complete the initial exam.

**Note:** The earlier an applicant who has been approved contacts Pearson VUE to schedule the testing site, date and time, the better the chance of obtaining the preferred choice, as all testing centers are scheduled on a first-come, first-served appointment basis. Once the candidate has made a confirmed appointment with Pearson VUE, the testing center will immediately send the candidate an appointment confirmation email.

To change the original exam center appointment, or to postpone or reschedule the testing appointment date or time, the candidate must contact Pearson VUE. Candidates must reschedule or postpone exam appointments (by contacting Pearson VUE – not InfoComm) no later than 24 hours prior to the testing appointment to avoid additional fees. After that time, fees will result and must be paid directly to Pearson VUE at the time of rescheduling. See Part I, [Section F](#) for fees.

## E. No-Shows or Late-for-Appointment Policies

Candidates who are late or do not arrive for the testing appointment, or who do not cancel or reschedule their testing appointment as described in the previous section, will be required to re-apply and re-schedule the testing appointment through InfoComm. Candidates must complete and submit a reinstatement application along with the reinstatement fee to InfoComm. The reinstatement fee includes the testing center seat fee.

Certain extenuating circumstances may be appealed to the Director of Certification at InfoComm. Examples include disaster resulting in an officially declared "local state of emergency," death of an immediate family member within 14 calendar days prior to the exam date (copy of death certificate or obituary must be provided for consideration of the cancellation and rescheduling fee to be waived), or sudden illness or injury. A doctor's verification may be required.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## F. Exam Application, Rescheduling, No-Show and Retesting Fees

The exam fee must be paid by providing credit card information on the application form or attaching a check at the time the application is submitted.

### 2012 Certification Fees (US\$)

effective January 26, 2012

applicable VAT and taxes are not included

	Exam Fees	CTS	CTS-D	CTS-I
<b>Americas</b>	Member	\$300	\$400	\$400
	Non-member	\$400	\$500	\$500
	All certifications			
	RETEST, REINSTATEMENT (No-show/late for appt.) You must contact InfoComm Certification to re-apply		\$125	
	RENEWAL		\$125	
<b>Other Locations</b>	Member	\$320	\$420	\$420
	Non-member	\$420	\$520	\$520
	All certifications			
	RETEST, REINSTATEMENT (No-show/late for appt.) You must contact InfoComm Certification to re-apply		\$145	
	RENEWAL		\$125	
<b>All Locations</b>	All certifications			
	DUPLICATE/REPLACEMENT CERTIFICATES		\$20	

## G. Examination Withdrawal with Partial Refund of Fee

In order to be considered for complete withdrawal of testing with a refund of a portion of the examination fee (equal to one half original fee paid due to administrative and seat fees incurred), the approved candidate must contact the InfoComm Certification Office in writing.

## H. On the Day of the Exam

Candidates should report to the exam center on the day of exam as instructed in their appointment confirmation letter and plan to arrive at least 30 minutes prior to the appointment time. Candidates must check in using two forms of valid ID, one of which must be a government-issued photo ID with

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



signature (driver's license, government-issued photo ID or passport). **THE FIRST AND LAST NAME ON THE ID MUST MATCH EXACTLY THE NAME SUBMITTED ON THE APPLICATION OR THE CANDIDATE WILL BE DENIED ADMISSION.** Candidates can make changes to their names by contacting InfoComm ([certification@infocomm.org](mailto:certification@infocomm.org)) prior to scheduling their exam appointment. Candidates will also be required to provide a digital signature and have a digital photo taken when checking in.

The candidate demographic information used in exam application/eligibility documents, the certification database, on the certification, etc. is recorded in English. For certain Asian countries, specifically, China, Hong Kong and Taiwan, if a candidate does not have their English name printed on his/her passport, the candidate must use standard Pinyin to translate his/her name into English to match up to the required ID policies noted below. For ID purposes at the testing center the candidate must fulfill ONE of these options:

1. **Valid Passport Option-** For the exam application and certification process candidates should use the name as displayed on a valid passport. For ID purposes at the testing center, the candidate must present a valid passport which matches the exam application and eligibility notice.

**OR**

2. **Government Issued ID and one other ID Option-** The standard Pinyin English translated name must be used for the exam application and certification process. For testing center identification purposes, **both** a valid government issued National ID for the photo verification **and** either a valid credit card or military ID that has a matching signature to the name on the National ID for the signature portion of the verification of ID must be provided by the candidate. Testing center staff will verify that the standard Pinyin English translated names on the two presented IDs match the exam application/eligibility documents.

**Note:** *Candidates will not be admitted to take the exam if any of the above requirements are not met. Candidates who are not permitted to test due to violation of the above agreement will forfeit their exam fee, and must reapply and pay a reinstatement fee in order to reschedule another exam date.*

Candidates should be at the exam site at least 30 minutes prior to the scheduled start time. It is not necessary (however, it is preferred) to have your email or letter of confirmation with you, but you must have proper identification, which includes the valid ID mentioned above with the name and address on the ID matching the information on file with InfoComm and Pearson VUE (per earlier confirmations sent to the candidate upon scheduling).

**Note:** *Anyone who arrives after the assigned testing appointment time will be considered a "no-show," will not be admitted and will be required to re-apply by contacting InfoComm and paying a reinstatement fee in order to retake the exam.*

The exam center supervisor will keep the official time and ensure that the proper amount of time is provided for the exam. Shortly after completion of the exam the candidate will receive an email and will be requested to complete an electronic survey, which will be used to measure and improve the entire exam process.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



The candidate will be reminded when logging in to the testing center computer screen prior to being allowed to take the exam that he/she has agreed to follow the CTS Code of Ethics and Conduct and non-disclosure agreements earlier during the application process.

During the exam, candidates will have access to an online calculator and a wipe-off note board provided by the testing center.

Candidates will have the capability to provide comments for any question, as well as mark questions and return to them for review. There will be an onscreen reminder with a 15-minutes-left warning.

Candidates are not allowed to bring anything into the testing room. Secure lockers are provided to candidates to store their personal items while taking the exam.

The following are NOT PERMITTED in the exam room or center:

- slide rules, papers, dictionaries, or other reference materials
- telephones, signaling devices such as pagers, cell phones
- alarms or recording/playback devices of any kind
- calculators
- photographic or image copying devices
- electronic devices of any kind
- jewelry or watches (time will be displayed on computer screen and wall clocks in each testing center)
- caps or hats (except for religious reasons)

No exam materials, notes, documents, or memoranda of any kind are to be taken from the exam room. Questions concerning the content of the exam will not be answered during the exam. Listen carefully to the instructions given by the supervisor and read all directions thoroughly.

The supervisor may dismiss a candidate from the exam for any of the following reasons:

- If the candidate's admission to the exam is unauthorized
- If a candidate creates a disturbance or gives or receives help
- If a candidate attempts to remove exam materials or notes from the testing room
- If a candidate attempts to take the exam for someone else
- If a candidate has in his/her possession any item excluded from the exam center as specified above
- If a candidate exhibits behavior consistent with memorization or copying of exam items

Restroom breaks are permitted, but are included as a part of the time allotted for the actual exam.

Any individual who removes or attempts to remove exam materials, including memorizing exam questions, or is observed cheating in any manner while taking the exam, will be subject to disciplinary and/or legal action. Sanctions could result in removal of the credential or denial to apply for any InfoComm credential.

Any unauthorized individual found in possession of exam materials will be subject to disciplinary procedures, in addition to possible legal action. If the individual is a CTS, sanctions could result in the removal of certification.

Candidates in violation of InfoComm testing policies are subject to forfeiture of exam fee, and face disciplinary and/or legal action.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## I. Hazardous Weather or Local Emergencies

In the event of hazardous weather, or any other unforeseen emergencies occurring on the day of an exam, Pearson VUE will determine whether circumstances require the cancellation. Every attempt will be made to administer all exams as scheduled. Pearson VUE has an incident management team, which handles these events. When an exam center must be closed, Pearson VUE contacts all affected candidates and asks them to reschedule. Candidates are contacted through every means available: email and all phone numbers. This is another reason for candidates to provide and maintain up-to-date contact information with InfoComm and Pearson VUE.

## J. Exam Security

All exam materials are the property of InfoComm. Removal of any material from the exam room by unauthorized persons is prohibited. Copyrights for the CTS-I exam are owned by InfoComm. Law prohibits any attempt to reproduce or memorize all or part of the exam unless written permission is obtained from InfoComm.

## K. Appeal Policies

Appeals of the denial of initial certification can be made for:

- The technical accuracy and grading of questions
- Fairness of the execution of the certification testing procedures

Requests for an appeal must be made no later than 30 days after the applicant is denied certification. Within 60 days of the receipt of the written appeal, the Certification Appeals Committee must conclude its deliberations.

Similar appeals processes are in place for eligibility and renewal appeals. Ethics and disciplinary appeals are guided by the process guidelines as found at [www.infocomm.org/cts](http://www.infocomm.org/cts). Individuals who wish to submit a final appeal must have exhausted their remedies via the appropriate committee. For further information regarding specific appeals, contact the InfoComm Certification Office at [certification@infocomm.org](mailto:certification@infocomm.org).

## L. Summary of Scoring Process

InfoComm establishes the minimum passing score for each examination based on an extensive psychometric profile of the examination. The final passing score for each examination form is established by a panel of subject matter experts using a criterion-referenced process, which defines the minimally acceptable level of competence.

**Note:** *In order to allow scores on one examination form to be compared to scores on another examination form, the scores are scaled so that the passing score is always 350 out of a possible 500 points. The scaling process is a simple linear transformation which does not affect the rank ordering of scores or whether a particular candidate passes or fails the examination. This process is very similar to that used for converting measurements from inches to centimeters; the actual length of the item being measured has not changed; only the scale used to describe the length has been changed.*

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



Candidates who do not pass the examination are provided with percentages of correctly answered items in primary content areas. An additional [scoring FAQ sheet](#) is provided online.

The percentage scores reported for each content domain are provided in order to help candidates identify their relative areas of strength and weakness in order to assist them with future study efforts. It is not possible to arrive at your total exam score by averaging these percentages because there are differing numbers of items on the examination from each of the domains. Information on the number of questions drawn from each domain is provided in the Candidate Handbook.

The passing standard was established by a panel of content experts using criterion referenced process which takes into consideration the difficulty of the questions used on each examination form. As a result, the actual number of questions that must be answered correctly in order to pass may vary slightly. In other words, on a harder examination form candidates would have to answer fewer items in order to achieve a passing score. In order to allow scores from one examination form to be compared to scores from another form, professional testing experts scale the scores so that the passing score on both forms is equal to 350. Even though 350 is 70 percent of 500, the passing score on the examination may not be exactly 70 percent. For further information please see the How the Exam is Scored FAQ on the [www.infocomm.org/cts](http://www.infocomm.org/cts) website under "Start the Certification Process."

Samples of the score reports like the ones provided at the testing center upon completion of the exam are in this handbook. A sample "CTS-I Pass" score report is located as [Appendix H](#) in this handbook. A sample "CTS-I Fail" score report is located as [Appendix I](#) in this handbook.

Following certification best practices, as a final check and balance, actual field results of exam questions are analyzed periodically and occasionally necessitate rescoring of the exam. If a rescore occurs and results in a change in status from a fail to pass, the Certification Office will notify the candidate.

## M. Cancellation of Scores

The Certification Committee is concerned with reporting only valid scores. On rare occasions, circumstances may invalidate exam scores. The Certification Committee reserves the right to cancel or withhold exam scores if there is any reason to question their validity.

Doubts may be raised about the validity of candidates' scores because of suspected misconduct; in such circumstances, candidates should cooperate in the investigation of their scores. Such candidates will be notified of procedures to ensure fair treatment. Some scores may be rendered invalid due to circumstances beyond candidates' control, such as faulty exam materials or mis-timing. In this rare event, retesting will be arranged.

In addition to the reasons listed above, the Certification Committee may cancel or invalidate exam results if, upon investigation, violations of Certification Committee policies outlined in this publication have been committed.

## N. Special Accommodations for Exams

The Certification Committee complies with the Americans with Disabilities Act (ADA) (or country equivalent) and is interested in ensuring that no individual is deprived of the opportunity to take the exam solely by reason of a disability as defined under the ADA (or equivalent). There are two forms required: Request for InfoComm (CTS, CTS-D, CTS-I) Exam Special Accommodations, and

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



InfoComm CTS Exam, Healthcare Documentation of Disability Related Needs. Both are found in this Candidate Handbook as Appendix C and D.

Applicants requiring special accommodations must complete both forms and submit them with their application information to the InfoComm Certification Office no later than 45 days prior to the desired exam date. Requests for special testing accommodations require documentation of a formally diagnosed and qualified disability by a qualified professional who has provided evaluation or treatment for the candidate.

**Note:** Requests without proper documentation will not be processed until all required documentation is received by InfoComm and the 45-day advance notice window will begin as of the date all documentation is received.

## O. Retesting

Candidates who do not pass the CTS-I exam may retake the exam two additional times, with a minimum period of 30 days between the exams. Complete the CTS-I Exam Retest Form found as [Appendix G](#) in this handbook and available at [www.infocomm.org/cts](http://www.infocomm.org/cts). Candidates have up to 120 days to retest each time, once approved for a retest. After two retest attempts, the individual must wait a period of 90 days before restarting the application process. This period allows the applicant time to adequately prepare for the retest and prevents over-exposure to the exam. Currently certified CTS-I individuals may not retake the CTS-I exam, except as specified by the InfoComm renewal policy. Candidates must also meet all eligibility requirements in effect at the time of any subsequent application.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## II. Application-Related Information

### A. CTS-I Eligibility Requirements

*Note: See Appendix A for complete CTS-I Exam Content Outline.*

The InfoComm CTS-I Job Description as established by the Job Task Analysis is as follows:

*A Certified Technology Specialist-Installation (CTS-I) installs and maintains audiovisual systems by following specifications, schematics, codes and safety protocols; administering installation process logistics; troubleshooting and problem-solving systems; maintaining tools and equipment; and communicating with clients, designers, other trades, other installers and staff to provide the best audiovisual solutions for client needs, on time and within budget.*

#### Specific CTS-I Applicant Eligibility Requirements

In order to be eligible to sit for the CTS-I certification examination, applicants must meet the following requirements:

- *Agree to the terms and conditions as noted in the CTS-I Application, which includes agreement to the CTS Code of Ethics & Conduct.*
- *Hold current certification as a general CTS*
- *Be in good standing with the Certification Committee (no ethics cases or sanctions)*
- *Provide documentation verifying a minimum of two years audiovisual industry experience in audiovisual installation as verified by signature of owner, supervisor, HR department OR provide redacted documentation such as W2s, performance reviews, client letters etc.*
- *Provide verification of attainment of skills in the following technical areas:*
  - a) *termination*
  - b) *rack-build*
  - c) *projector set-up and installation*
  - d) *audio set-up and EQ*
  - e) *mounting equipment*
  - f) *customer service relations*

Applicants are strongly urged to refer to the examination content outline found in [Appendix A](#) for details regarding the level of skill and knowledge required to earn the CTS-I. The CTS-I Exam Application located in [Appendix B](#) contains instructions on documenting experience requirements.

**Note:** *Please see the CTS-I application located in Appendix B of this handbook for further details regarding the verification of experience section of the application.*

### B. Auditing of Applications

The Certification Committee randomly audits applications to verify an applicant's eligibility to take the exam. A candidate whose application is being audited will be notified in writing by the Certification Office and given a reasonable timeframe to provide any additional documentation that is required. If a

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



candidate does not respond by the deadline, or does not provide the required documentation within the given time frame, he or she may be declared ineligible. If the exam has already been taken, any candidate or individual certified through the Certification Committee found to be ineligible will be referred to the Ethics and Disciplinary Committee to be processed under the guidelines of that committee.

## C. Application Procedures

To apply for the CTS-I certification exam, visit [www.infocomm.org/cts](http://www.infocomm.org/cts), the InfoComm website, and first read or download the free CTS-I Candidate Handbook and current CTS-I candidate application. CTS-I applications must be printed and mailed, scanned and emailed, or faxed along with required documentation and payment as noted on the application (sample application is located in Appendix B of this handbook). All signatures must be submitted by the applicant and agreed to as provided in the CTS-I application.

InfoComm will review and respond to applications within approximately 10 business days after receiving the complete application materials and payment. For applications that are incomplete or lack documentation and/or payment, InfoComm will contact the applicant regarding the missing requirements. Once approved for eligibility, the applicant will be notified within one business day of InfoComm submitting approval information to Pearson VUE and the candidate then may contact Pearson VUE after a 24-hour period to make a testing appointment.

For further questions or additional information, please check the InfoComm Certification website first at [www.infocomm.org/cts](http://www.infocomm.org/cts) and the following site for testing locations: [www.pearsonvue.com/infocomm](http://www.pearsonvue.com/infocomm) and clicking on "Locate a Testing Center."

Direct subsequent questions, comments or suggestions to:

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)  
[www.infocomm.org](http://www.infocomm.org)

## D. CTS Code of Ethics and Conduct and Disciplinary Policies

As a credible credentialing organization, the Certification Committee is committed to and is obligated to protect and defend the credentials provided by InfoComm. Every candidate and audiovisual professional certified through the Certification Committee must adhere to the CTS Code of Ethics and Conduct (see Appendix E). When it is believed that a CTS, CTS-D or CTS-I has violated this Code of Ethics and Conduct, the first step is to complete the Professional Discipline Complaint Form found at [www.infocomm.org/cts](http://www.infocomm.org/cts). The form may also be obtained by calling or writing the InfoComm Certification Office.

The Professional Discipline Complaint Form must be completed in its entirety, signed and submitted with any documentation to:

InfoComm International, Attn: Certification Office  
11242 Waples Mill Rd., Suite 200  
Fairfax, VA 22030

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



Please include all suitable documentation in support of this complaint. Upon receipt, the Ethics and Disciplinary Committee will determine whether an inquiry can be initiated under its authority. Please be advised that this committee will consider matters regarding possible violations of the CTS Code of Ethics and Conduct including falsification of applications. The process used will be that as found on the website at [www.infocomm.org/cts](http://www.infocomm.org/cts).

The Ethics and Disciplinary Committee shall have the power to, but shall not be obligated to, investigate all allegations of unprofessional and unethical conduct that may be harmful to colleagues, the public, or that otherwise may be contrary to the objectives of the CTS Code of Ethics and Conduct provided that such allegations are made in writing and are signed by the complainant. If, during the course of its investigation, the committee determines that there may be additional violations of the code, the committee may investigate and reach appropriate findings regarding such additional violations within the Certified Technology Specialist Rules and Procedures Regarding Ethical and Professional Discipline Complaints.

The Ethics and Disciplinary Committee reports findings to the Certification Committee, publishes sanctions and shall also at least annually review the CTS Code of Ethics and Conduct and the Certified Technology Specialist Rules mentioned above to ensure that the integrity, professionalism and competency of those certified through the CTS program are suited to the needs of InfoComm International and the audiovisual profession.

Matters involving fraudulent use of the credential and/or trademark or copyright violations will be investigated and aggressively pursued by the Certification Committee and InfoComm International.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## III. Important CTS-I Certification Program Information

### A. Certification Committee's Position on Education

The Certification Committee believes that as a credible credentialing organization it should facilitate appropriate preparation of candidates for the CTS-I exams. InfoComm, under the requirements of the ISO/IEC/ 17024 standard will provide appropriate exam preparatory materials and other programs and services as allowed by those accreditation requirements and will continue to work with other audiovisual stakeholders to encourage educational and training programs in assisting candidates with attaining knowledge, skills and abilities as audiovisual professionals.

The InfoComm Certification Committee and InfoComm do not accredit or endorse any particular training course or source of education as a guarantee of success on the CTS-I exams.

The Certification Committee and InfoComm, in keeping with the accreditation requirements of the ISO/IEC 17024 standard, do not link any training or education programs or any other educational provider's educational programs offered, to obtaining a CTS-I credential.

The Certification Committee provides, as public information, a CTS-I Candidate Handbook, an Exam Content Outline with job task analysis information, a primary reference materials listing, glossary, and other materials online at [www.infocomm.org/cts](http://www.infocomm.org/cts). These materials are suggested for helping individuals to become prepared for the CTS-I exam. The list and information provided is not intended to be inclusive of all potentially useful resources, nor does inclusion on this list constitute an endorsement by the Certification Committee. The Certification Committee does not endorse any particular reference as being completely accurate and encompassing and it is recommended that applicants utilize multiple resources in the process of preparing for the exam.

Experience indicates that audiovisual technology candidates who participate in formal training programs emerge better prepared for their professional positions as audiovisual technology specialists and as qualified candidates for the CTS-I certification exam than those who do not.

### B. Certification Committee Statement of Non-Discrimination

The CTS-I certification program does not discriminate among applicants on the basis of age, gender, race, religion, national origin, disability, marital status or sexual orientation.

### C. Confidentiality

The Certification Committee and InfoComm adhere to required best practices utilizing strict guidelines as regards confidentiality of candidates, certificants, score results, and all certification related materials not otherwise deemed public information. All committee, panel and task force chairs, and members are required to sign a confidentiality agreement. InfoComm staff, as well as testing service staff assigned to the InfoComm account, are also required to sign a confidentiality agreement.

Information about candidates and their exam results is considered confidential. Studies and reports concerning candidates will contain no information identifiable with any candidate, unless authorized by the candidate.

All personal data including applications, payments, scores and contact information maintained by InfoComm or InfoComm testing partners is stored in confidential electronic and hard copy files with access limited to authorized and designated staff.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## D. Opt-Out Policy

Limited information is provided publicly in the searchable directory of certified individuals located at [www.infocomm.org/ctssearch](http://www.infocomm.org/ctssearch). This information is limited to First and Last Name, City, State, Country and Expiration Date. Anyone certified as a CTS-I who does not wish to have his or her information included in the online directory should contact the InfoComm Certification Office by letter or email at [certification@infocomm.org](mailto:certification@infocomm.org). Upon request, the InfoComm Certification Office is required to respond to requests to verify certification of an individual to include name, current certification level(s), good standing or any current sanctions that may be in place and expiration date. The CTS online directory contents are the property of the Certification Committee and are to be used for verification purposes only.

It is the policy of the Certification Committee to not sell or rent contact lists of certificants. As a part of the application and ongoing credential renewal process, the Certification Committee policies provide permission for certification staff, agents and contractors to contact certified CTS individuals by U.S. mail, electronic mail, facsimile or other media on matters limited to those which the Certification Committee believes may be of significant interest to a CTS-I holder. To be removed from the mailing list, contact the InfoComm certification office by letter or email at [certification@infocomm.org](mailto:certification@infocomm.org).

## E. Trademarks and Copyrights

InfoComm has trademarked the Certified Technology Specialist and CTS certification marks in the U.S. and is in the process of doing so internationally. In addition, all exam materials and all publications of InfoComm – both printed and electronic – are copyrighted. These trademarks and copyrights are protected under U.S. and international law and any unauthorized uses of these marks or copyrights are prohibited. Violators are subject to prosecution under applicable laws. In order to use any of these marks or portions of these materials, individuals or organizations must obtain prior approval in writing from the Certification Office.

## F. Address, Name or Contact Information Changes

Candidates and subsequent CTS certified individuals who have a change in their mailing address or contact information must notify the certification office in writing (email, fax or mail) to ensure that all records, score reports and certificates are sent to the correct address and received in a timely manner. Change of address requests should be mailed, emailed or faxed to:

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)  
[www.infocomm.org](http://www.infocomm.org)

The Certification Committee issues certificates to successful candidates in their legal name. Candidates who legally change their name must notify the Certification Office in writing. Name change requests should be mailed to the Certification Office. Please note that a notarized copy of official or certified documentation supporting the request (e.g., a notarized copy of a marriage certificate) must be included with the request. Requests received without official documentation will not be processed.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## G. Duplicate or Replacement Certificates

Individual duplicate or replacement certificates can be ordered through the certification office for a small fee. See the chart of fees in Part I, [Section F](#)- Fee Schedules. Duplicates/replacements may only be ordered by the CTS holder. Any change of address must be requested in writing from the CTS holder (email is satisfactory).

If you have not received your certificate, you must notify the certification office within 120 days of earning/renewing your certification(s). If the certification office is not notified within 120 days, the duplicate certificate fee must be paid.

## H. Verification of Credentials

The Certification Committee provides a searchable online CTS directory located at [www.infocomm.org/ctssearch](http://www.infocomm.org/ctssearch). In addition, individuals or organizations may request written verification of an individual's registry status from the Certification Office. Requests for verification may be made to the Certification Office in writing, by fax, by telephone or by email. It is the responsibility of the Certification Office to verify certification information regarding those certified through the CTS certification program. Information provided online and in response to individual requests is limited to the following: first and last name, state, country and expiration date.

InfoComm is obligated to provide current certification status when contacted. Current sanctions against those certified are posted online at [www.infocomm.org/cts](http://www.infocomm.org/cts). The Certification Committee online directory contents are the property of the Certification Committee and are to be used for verification purposes only.

## I. Renewal Policy

To maintain the integrity and value of certification in a fast-changing industry, CTS-I designated individuals must renew every three years through continuing education. The CTS-I must submit a [Certification Renewal Application](#) (see Appendix F in this handbook or online at [www.infocomm.org/cts](http://www.infocomm.org/cts)) to the Certification Office every three years with the required information and a renewal fee of \$125 USD.

**Note:** Please note that it is critical to notify the Certification Office of any email and other contact changes while maintaining certification. This is the only way the Certification Office can notify you of an upcoming expiration date or other critical information. Individuals are required to accumulate 30 renewal units (RUs) during the three years certification is valid.

Certificants applying for renewal at any CTS level:

- Must have been actively employed in the audiovisual industry for a minimum period of one year during the three-year certification period.
- Must have completed thirty approved (30) renewal units (RUs) within the three year certification period. (Note: each specialty level of certification over the basic CTS level must be renewed separately, however the general CTS does not have to be

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



renewed if the individual maintains a higher specialty level of certification (CTS-D or CTS-I).

- Must sign and agree to continue to abide by and uphold the CTS Code of Ethics and Conduct (included in the renewal application).
- Must agree to continue to use any CTS designation in an authorized and appropriate manner. Only those individuals who maintain their CTS certification requirements may continue to use the CTS designation.

## CTS-I Renewal Requirements

Certified Level(s)	Renewal Date	Renewal Units (RUs) Required	Fee
CTS & CTS-I	Renew CTS-I only 3 years from original date of certification. (CTS is automatically renewed when CTS-I is renewed).	30 RUs with a minimum of 15 RUs approved for the CTS-I level with remainder of RUs from general CTS level	\$125.00 (USD)

CTS-I holders who are also CTS-D certified should consult the Renewal Handbook for requirements.

Sources for renewal units include InfoComm Academy® online and classroom courses; Institute for Professional Development courses; InfoComm seminars and workshops; approved manufacturer, private vendor and association courses; and postsecondary education. InfoComm maintains a list of eligible courses and associated renewal units. Please visit [www.infocomm.org/renewal](http://www.infocomm.org/renewal) and see the Renewal Handbook for details.

## J. Other InfoComm CTS Certification Program Recognition

The InfoComm CTS certification program is also approved by the United States Veteran's Administration for reimbursement to veterans under the GI Bill. For further information please go to [http://www.gibill.va.gov/pamphlets/LC\\_brochure.pdf](http://www.gibill.va.gov/pamphlets/LC_brochure.pdf)

## IV. Preparation and Education

### A. CTS-I Exam Content Outline Process

As you prepare for the CTS-I exam, you may encounter several terms about the exam process that are new to you. A [Glossary of Candidate Handbook Terms](#) is located at the beginning of this handbook.

To create this exam, a group of volunteers participated in a Job Task Analysis study to identify the major categories (domains) for the certification examination and topics within each domain based on the jobs and tasks a certified individual might perform. These categories and topics have already been organized into an Exam Content Outline (a complete test outline, including the percentage of each content area to the overall test) (see Appendix A) that is approved by a Scheme (exam) Committee.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## B. Preparation and Testing Tips for the Exam

### STEP ONE: Self-Assessment

The first step to prepare for the exam is a self-assessment of your own readiness:

- Review the description of what a CTS-I does in this handbook. Do you feel ready to fulfill all of these tasks? (Also refer to the CTS Exam Resources pages and assessment tools located at [www.infocomm.org/cts](http://www.infocomm.org/cts) - Start the Certification Process.)
- Have you met the eligibility requirements?
- Take the free [CTS-I Practice Exam](#)

### STEP TWO: Review of Exam Topics

Review the exam content outline from two different perspectives:

- Which content areas represent the greatest number of test questions? The greater the number of possible questions on the exam, the more focus you need on these topics to prepare for the exam. As an example, if there is only one question out of 100 questions on a specific item, it would not make sense to spend 50 percent of your study time on that topic.
- How does your current knowledge and skill compare to these content areas? Are you strong in some but weak in others? If you have had extensive training and/or experience in a specific area, you may decide that your focus should be on the areas that are less familiar to you.

Your analysis of these two questions will help you decide where you need to spend your study time.

### STEP THREE: Determine Difficulty Level

It is hard to define difficulty levels; what may be easy for some can be harder for others. Some topics may also seem broad in scope. Here are some tips to help you gauge the scope of the topic:

- Revisit the credential description and the eligibility requirements, if any. Is it expected that someone with this level of experience would be able to do this task at this level?
- Using the full duties/tasks/steps document from the Exam Content Outline, drill down into each topic by reviewing the skills, knowledge, and tools and equipment required to do the work appropriately to help you determine to what level you need to prepare.
- Correlate suggested reference works against the topics. What level of difficulty do they represent?
- Review sample questions.

### Study Recommendations

The study recommendations described here may be helpful as you prepare for the exam. Try to be objective about your abilities when you are deciding how best to proceed with your study.

Determine how you study best. Some individuals seem to learn faster by hearing information, while others need to see it written or illustrated, or prefer to discuss material with colleagues. A combination of these alternatives may produce the most effective study strategies for you. If you have had

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



success in lecture courses with little outside review, it may be that you need to HEAR information for best retention. If you find that you prefer to READ material, then you might consider jotting down important information on index cards and refresh your memory by periodically reviewing the cards.

This is especially effective if you write the material thoughtfully and concisely, allowing for study through both writing and reading. Additionally, you may wish to organize a study group and find a study partner. Once you decide on a study approach, focus on that preference and use the other methods to supplement it.

Plan your study schedule in advance of the exam and allow sufficient time for meaningful, organized study. Find a quiet place to study where you will not be interrupted.

Candidates not familiar with computers may wish to practice ahead of time using a computer. A computer-based testing tutorial will be provided at the beginning of the exam.

## On the Day of the Exam

A computer-based testing tutorial will be provided at the beginning of the exam.

InfoComm's certification website pages contain CTS-I exam resources page, which may be of use when preparing for the exam. Visit [www.infocomm.org/cts](http://www.infocomm.org/cts) - Start the Certification Process.

**Note:** *The following summary regarding the exam process is primarily presented to familiarize you with helpful information for taking the exam.*

- Plan to arrive at the site of the exam the night before the exam, unless you live in the locale of the exam center (i.e., no more than one hour driving distance), and get a good night's rest.
- Candidates should actually go to the physical location of the testing center prior to the exam to ensure exactly where to go and how to get there on the day of the exam and allow extra time for unforeseen events such as traffic and flat tires. This will help reduce unnecessary stress.
- Eat a well-balanced meal prior to reporting to the exam center on the day of the exam, but limit the amount of stimulants you ingest (e.g., caffeine).
- Read and follow all instructions carefully.
- Be at the exam site at least 30 minutes prior to the scheduled start time for registration processing.
- For best results, pace yourself by periodically checking your progress. This will allow you to make necessary adjustments. Remember, the more questions you answer, the better your chance of achieving a passing score. If you are unsure of a response, eliminate as many options as possible and choose an option from those that remain. You will be allowed to mark questions for review prior to the end of the exam.
- Be sure to record an answer for each question, even if you are not sure the answer is correct. You can note the questions you wish to review and return to them later. All questions are of equal weight. Avoid leaving any questions unanswered; marking an answer to all questions will maximize your chances of passing. There is no penalty for guessing and each item counts one point.
- Candidates are encouraged to go through the pre-exam tutorial at the test site as well as a pre-exam tutorial available prior to your appointment at the [www.pearsonvue.com/infocomm](http://www.pearsonvue.com/infocomm) site.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## C. CTS-I Exam Primary References

A detailed job task analysis is available on the CTS Exams Resources page of InfoComm's website. Visit [www.infocomm.org/cts](http://www.infocomm.org/cts), select "Start the Certification Process" and find the CTS-I Exam Resources.

ISO/IEC 17024 accreditation requirements acknowledge the need for candidates to prepare for exams from a variety of materials and sources. InfoComm and/or the Certification Committee acknowledge that it is not the sole provider of reference and educational materials for these questions. The audiovisual industry represents both science and art; some areas are documented, many areas are still in debate. Listed below are some references from InfoComm's body of knowledge appropriate for this exam.

- *INS201 InfoComm Installation Online*
- *InfoComm AV Installation Handbook*
- *INS212 Installation Technician* classroom course
- *INS311 Lead Installation Technician* classroom course
- InfoComm Live Event White Papers
- *GEN103 InfoComm Audio-Video and Control Systems Networking Online*
- Cape, Timothy W. and Jim Smith. 2005. *Audiovisual Best Practices: The Design and Integration Process for the AV and Construction Industries*. Fairfax, Va: InfoComm.
- For a learner who likes to study with others in a classroom environment, InfoComm offers an *INS312 CTS-I Study Group* which provides **peer-to-peer learning** with a facilitator on topics in the exam content outline.

## D. Other Reference Materials

There is a wide range of materials and education available about the audiovisual industry in general that would be helpful in your preparation. Examples include:

- Lampen, Stephen H. 2002. *Audio/Video Cable Installer's Pocket Guide*. New York: McGraw-Hill.
- *AV Design Reference Manual*. 2006. BICSI® and InfoComm International®.
- Da-Lite, ed. *Angles of View: Collected Edition 1995-1997*. Warsaw, Ind.: Da-Lite Screen Company, 1997.
- Giddings, Philip. *Audio Systems Design and Installation*. Boston: Focal Press, 1990.
- Project Management Institute, Inc. 2004. *A Guide to the Project Management Body of Knowledge (PMBOK)* 4th edition. Newton Square, Pa.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## E. Abbreviations/Glossary

Please go to [www.infocomm.org/cts](http://www.infocomm.org/cts) for the most recent version of InfoComm's exam abbreviations and glossary of terms used.

## F. Sample Questions

To help you prepare, here are some sample questions. First, it is helpful to distinguish between a knowledge-based vs. job/task-based question. The exam will consist of job/task-based questions. Compare the two types:

Here is an example of a knowledge-based question:

- 
- Aspect ratio is the
- A. relationship of the width to the height of a displayed image
  - B. viewer's attitude when viewing an image
  - C. relationship of the viewer distance to the screen size
  - D. relationship of the number of viewers to the screen diagonal measurement
- 

Certification questions need to relate knowledge and skill to a specific job task. To answer correctly, the candidate needs to have the knowledge and then take it to the next step by applying the knowledge to a specific task in the audiovisual industry. The aspect ratio question above verifies that the candidate knows a specific fact.

A job/task-based question using this knowledge would look like this:

- 
- The customer has an existing screen that is 2 meters wide and 1.5 meters high. Which computer resolution matches the customer's projection screen aspect ratio?
- A. XGA 1024 x 768
  - B. SXGA 1280 x 1024
  - C. WSXGA 1680 x 1050
  - D. EGA 640 x 350
- 

Here are more examples of job/task-based questions:

- 
- A cable has an attenuation specification of 12 dB/100 m at 50 MHz. A 1 mV signal is connected to a 50 m run of this cable and terminated into 75 ohms at the end. What signal level will arrive at the end?
- A. 0.5 mV
  - B. 0.25 mV
  - C. 0.4 mV
  - D. 0.9 mV
- 

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



---

In a null modem RS-232 cable terminated in DB-9 connector, pin 2 on one end will connect to which pin on the opposite end?

- A. 3
  - B. 2
  - C. 1
  - D. 5
- 

What is the proper pin configuration for T-568B termination?

- A. pins 1 - 8, Or-Wh, Or, Gr-Wh, Blu, Blu-Wh, Gr, Brn-Wh, Brn
  - B. pins 1 - 8, Or-Wh, Or, Gr-Wh, Gr, Blu, Blu-Wh, Brn-Wh, Brn
  - C. pins 1 - 8, Gr-Wh, Gr, Blu, Or-Wh, Or, Blu-Wh, Brn-Wh, Brn
  - D. pins 1 - 8, Gr-Wh, Gr, Or-Wh, Blu, Blu-Wh, Or, Brn-Wh, Brn
- 

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix A: CTS-I Exam Content Outline

### CTS-I Examination Specifications

The CTS-I test specifications were developed by combining the importance, criticality and frequency data obtained from the Job Task Analysis study conducted in December 2006. The resulting data were converted to percentages and the percentages were used to determine the number of questions related to each Domain and Task that should appear on the multiple-choice CTS-I examination. The test specifications in the table below list how many questions are included in each Domain and Task and the percentage of the test included in each Domain:

CTS-I Domains/Tasks	% of Exam	# of Items
<b>Domain A: Conducting Pre-Installation Activities</b>	<b>23%</b>	<b>23</b>
Task 1: Review Audiovisual Project Documentation	4.0 %	4
Task 2: Conduct Technical Site Survey	4.0%	4
Task 3: Prepare for Audiovisual Installation	4.0%	4
Task 4: Evaluate Overall Facility Conditions	4.0%	4
Task 5: Maintain Tools and Equipment	3.0%	3
Task 6: Prepare Site for Installation	4.0%	4
<b>Domain B: Conducting Site Rough-In/First-Fix</b>	<b>12%</b>	<b>12</b>
Task 1: Deinstallation of Existing Equipment/cabling	4.0%	4
Task 2: Pull Cable	4.0%	4
Task 3: Mount Substructure	4.0%	4
<b>Domain C: Installing Audiovisual Systems</b>	<b>36%</b>	<b>36</b>
Task 1: Conduct Off-site Fabrication	3.0%	3
Task 2: Prepare Audiovisual Rack	4.0%	4
Task 3: Wire the Audiovisual Equipment Rack	4.0%	4
Task 4: Distribute Audiovisual Equipment	3.0%	3
Task 5: Mount Audiovisual Equipment	4.0%	4
Task 6: Terminate Cables	4.0%	4
Task 7: Configure Network Attached Components (ISDN, IP, POTS, etc.)	3.0%	3
Task 8: Load Control Programs	3.0%	3
Task 9: Test the Audiovisual Equipment	4.0%	4
Task 10: Calibrate Audiovisual Equipment	4.0%	4

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



<b>Domain D: Perform Systems Close Out</b>	<b>10%</b>	<b>10</b>
Task 1: Demonstrate to Client or Client's Representative that System Performs to Specifications	4.0%	4
Task 2: Obtain Project Completion Sign-Off from Client or Client's Representative	3.0%	3
Task 3: Provide Training on Equipment Operation	3.0%	3
<b>Domain E: Conducting Ongoing Project Responsibilities</b>	<b>19%</b>	<b>19</b>
Task 1: Perform Site Clean-up	3.0%	3
Task 2: Complete Daily Progress Reports	3.0%	3
Task 3: Coordinate with Other Contractors	4.0%	4
Task 4: Conduct Field Engineering	4.0%	4
Task 5: Repair Audiovisual Systems	3.0%	3
Task 6: Maintain AV Systems	2.0%	2
<b>Total</b>	<b>100%</b>	<b>100</b>

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## CTS-I Examination: Job Task Analysis

A detailed job task analysis is available on the CTS Exams Resources page of InfoComm's website. Visit [www.infocomm.org/cts](http://www.infocomm.org/cts), select "Start the Certification Process" and find the CTS Exams Resources.

---

### Domain A: Conducting Pre-Installation Activities Task 1: Review Audiovisual Project Documentation

#### Knowledge of:

- Converting scales
- Local language
- Reading and interpreting drawings
- Interpreting measurements and symbols

#### Skill in:

- Interpreting measurements
- Interpreting symbols
- Reading blueprints

- Reading written documentation
- Utilizing the Internet
- Basic computer operations
- Basic math
- Listening
- Verbal communication
- Written communication
- Typing
- Writing legibly

---

### Domain A: Conducting Pre-Installation Activities Task 2: Conduct Technical Site Survey

#### Knowledge of:

- Arranging site access and access limitations
- Site obstacles (i.e., ceilings, flooring, walls)
- Infrastructure (i.e., conduit, floor boxes, power location, data points, grounding)
- Mounting/rigging points for substructures
- Documenting observations (i.e., photographs, sketches, layouts)
- Special requirements (i.e., local code requirements, regulations, special cable requirements, cable management)
- Scaffolding
- Communicating site observations to project management
- Chain of command procedures
- Conduit capacities
- Electrical components (cable trays, pathways, backboxes, etc.)

- Employer policies
- General construction principles
- Installation options and alternatives
- Installation process
- Local codes
- Calculating throw distances
- Measuring distances
- Products
- System functionality
- Tool limitations and capabilities
- Basic first aid
- Lock out/tag out standards
- Safety standards (OSHA, health and safety, etc.)
- Hazard awareness

#### Skill in:

- Calculation of conduit capacities
- Calculation of throw distances
- Measuring distances

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- Basic computer operations
- Basic math
- Interpersonal communication
- Technical writing
- Climbing ladders
- Taking documentary photographs of site conditions
- Using a manlift

---

## Domain A: Conducting Pre-Installation Activities

### Task 3: Prepare for Audiovisual Installation

#### Knowledge of:

- Audiovisual tools, materials and equipment
- Identifying connectors and cable requirements (quantity and type)
- Specialty tools (lifts, transportation, etc.)
- Network provisioning information
- Cable pull lists and hardware lists
- Special fabrication
- Permitting
- Calculating cable take offs
- Calculating load capacities
- Determining dimensions of custom parts
- Estimating project and task durations
- Reading and Interpreting schedules
- Selecting tools and sizes
- Safety meetings
- Cable specifications/limits/application
- Access limitations
- Basic first aid
- Chain of command procedures
- Conduit capacities
- Electrical components (cable trays, pathways, backboxes, etc.)
- Employer policies
- General construction principles
- Creating schedules
- Installation options and alternatives
- Installation processes
- LAN/WAN topology
- Local codes
- Network terminology
- Permitting requirements
- Products
- Project budgets
- Project timelines
- Proper tool use
- Resource allocation
- RoHS compliance requirements
- Security requirements
- Signal types transmitted by different cables
- Structural components and capacities
- Supply management
- System functionality
- Types of connectors and appropriate cable types
- Tool limitations and capabilities
- Activities performed by other construction trades

#### Skill in:

- Calculation of cable take offs (estimate cable quantities)
- Calculation of load capacities
- Determining dimensions of custom parts
- Estimating project and task durations
- Following instructions
- Reading and interpreting schedules
- Selecting correct tools and sizes
- Basic computer operations
- Basic math
- Interpersonal communication

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



---

## Domain A: Conducting Pre-Installation Activities

### Task 4: Evaluate Overall Facility Conditions

#### Knowledge of:

- Site logistics (parking, loading docks, elevators, lifts, etc.)
- Building access obstacles
- Required infrastructures
- Appropriate site conditions (i.e., dust free, HVAC operational, power, lighting)
- Calculating weight capacities
- Measuring distances
- Activities performed by other construction trades
- Building timelines
- General construction principles

- Security requirements
- The local language
- Visual-spatial relationships
- Construction hazards
- General hazards
- Facility specific hazards

#### Skill in:

- Calculation of weight capacities
- Measuring distances
- Written communication
- Verbal communication

---

## Domain A: Conducting Pre-Installation Activities

### Task 5: Maintain Tools and Equipment

#### Knowledge of:

- Rechargeable meters
- Drilling and cutting tools (bits, wire strippers, wire cutters, saw blades, etc.)
- Calibrating test equipment
- Labeling kits
- Electrical safety testing
- Tagging of electrical tools and equipment
- First aid kits and fire extinguishers
- Testing and tagging of safety and access equipment
- Equipment testing protocols

- Grounding
- Electrical power and electrical current
- Pre-use equipment checks
- Tagging requirements to verify inspection
- Tool and equipment calibration requirements
- Voltage

#### Skill in:

- Basic math
- Recognizing defective equipment
- Using a voltmeter

---

## Domain A: Conducting Pre-Installation Activities

### Task 6: Prepare Site for Inspection

#### Knowledge of:

- Marking installation locations for equipment and services
- Assembling scaffolding

- Identifying hazards and taking safety measures
- Calculating throw distances
- Measuring distances

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- Asbestos
  - Ceiling systems
  - Construction terminology
  - General construction principles
  - Hazards
  - Responsibilities of other trades
  - Scaffolding assembly
  - System functionality
  - Ladder safety
  - Fall protection
  - Confined spaces
  - Customer safety
  - Safety zones
  - OSHA/HSE
- Skill in:**
- Interpersonal communication
  - Basic math

---

## Domain B: Conducting Site Rough-In/First Fix

### Task 1: Deinstallation of Existing Equipment/Cabling

#### Knowledge of:

- Selecting equipment/cabling that should be removed
- Removing equipment/cabling
- Disposing of removed equipment/cabling
- Storing equipment/cabling per customer instructions or scope of work.
- Preparing equipment for reinstallation (testing, cleaning, labeling, etc.)
- Calculating weights and loads
- Electrical power
- Local disposal regulations

- Manual handling techniques
- System functionality
- OSHA/HSE
- Cadmium hazard
- Asbestos
- CRT

#### Skill in:

- Interpersonal Communication
- Drilling holes
- Painting
- Cutting drywall/plaster board

---

## Domain B: Conducting Site Rough-In/First Fix

### Task 2: Pulling Cable

#### Knowledge of:

- Identifying cable paths by signal types
- Cable pull lists and drawings
- Cable groupings
- Cable routes/paths for non-conduit cables
- Cutting in mud rings, low voltage rings, electrical boxes (or pattresses), backboxes, etc.
- Installing cable supports/containment
- Preparing cables for pulling
- Marking cables
- Marking spools and drums
- Pulling cable
- Securing cable
- Securing cable ends

- Calculating areas
- Calculating lengths
- Interpreting drawings
- Measuring diameters
- Measuring lengths
- Measuring volumes
- Measuring with an architect's scale
- Cable pulling techniques
- Cable terminology
- Cable types and applications
- Conduit capacities
- Fiber optic cables
- Fiber optic cable handling techniques
- Firestop requirements

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- OSHA/HSE/COSHH and related standards
  - Projects
  - Tensile and shear strengths
  - Fiber optic disposal
  - Asbestos
  - Power tool certifications
  - Confined spaces
  - COSHH - Control of hazardous substances
  - Calculating lengths
  - Interpreting drawings
  - Measuring diameters
  - Measuring lengths
  - Measuring volumes
  - Basic math
  - Applying firestop materials
  - Climbing ladders
  - Cutting cable
  - Making a snout (wire pull cable harness)
  - Pulling cable
  - Marking cable
- Skill in:**
- Calculating areas

---

## Domain B: Conducting Site Rough-In/First Fix

### Task 3: Mount Substructure

**Knowledge of:**

- Locations for mountings
- Methods/materials for mountings
- Prefabricated structures
- Installing anchors
- Attaching substructures
- Testing mountings of substructures
- Measuring distances
- Calculating weight capacities
- Adequacy of substructures
- Blocking (or noggin)
- Concrete construction methods and materials
- Correct locations for placing fasteners
- Engineering lumber
- Fasteners (capabilities, limitations, options, etc.)
- Glue laminated construction methods
- Pipes
- Powder actuated tools
- Rigging
- Safe working loads (weights and safety margins)
- Seismic restraints
- Slotted channel and accessories (unistruts)
- Steel construction methods and materials
- Tensile and shear strengths
- Threaded rods
- Throw distances
- Wood frame construction methods and materials
- OSHA/HSE
- Powder actuated tool certification
- Safety zones
- General work site conditions

**Skill in:**

- Measuring distances
- Basic math
- Cutting
- Drilling
- Calculating weight capacities
- Interpersonal communication

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



---

## Domain C: Installing Audiovisual Systems Task 1: Conduct Off-Site Fabrication

### Knowledge of:

- Creating material lists for off-site fabricated items
- Assembling off-site fabricated items
- AC theory
- Basic electronic components (resistors, diodes, transformers)
- Basic metalworking techniques: types of metal, gage, drilling, tapping, punching, layout, bend radius
- Basic woodworking techniques: types of wood and finishes, drilling, cutting, layout, laminates
- DC theory

- Lead time and schedule restrictions
- Materials
- Outsourcing and fabrication options
- Punch tools
- Tap and die use
- Tool selection
- OSHA and health and safety Requirements

### Skill in:

- Cutting
- Drilling
- Marking out items

---

## Domain C: Installing Audiovisual Systems Task 2: Prepare Audiovisual Rack

### Knowledge of:

- Drawings and project documentation
- Assembling audiovisual equipment racks from kits
- Populating audiovisual equipment racks
- Installing rack infrastructures (lacing, power, fans, peripherals, etc.)
- Documenting serial numbers of equipment
- Interpreting rack elevations
- Measuring rack units
- ADA requirements
- Electrical power and grounding
- Rack accessories and components

- Rack elevation design
- Screw gun settings, torque settings
- Standard rack unit and width
- System functionality and components
- Ventilation requirements
- Weight distribution

### Skill in:

- Reading comprehension
- Assembling a rack

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



---

## Domain C: Installing Audiovisual Systems

### Task 3: Wire the Audiovisual Equipment Rack

#### Knowledge of:

- Setting up workstations (terminating supplies, heat shrink guns, etc.)
- Selecting cables for applications
- Determining cable dressing strategies
- Measuring cable lengths
- Terminating cables (audiovisual, network, power, etc.)
- Installing cables and cable management techniques
- Cable labeling
- Testing cable
- Testing rack loaded components
- Documenting changes (mark ups)
- Selecting die sets
- Measuring cable lengths
- Crimping techniques (BNC, spade lugs, bell caps, ferrules)
- Adjusting torque on screw gun
- Balanced and unbalanced audio
- Cable types
- Client requirements (e.g., military, government)
- Compression connections
- Compression techniques
- Connector types

- Cable preparation for connector types
- Crimp connections
- Dressing techniques for racks
- Fiber optic terminations
- Insulation displacement
- Labeling systems
- Lacing components
- Linear compression techniques
- Plenum rated tie wraps
- Tie wrap applications and selection
- Service loops
- Signal separation
- Signal types
- System functionality
- The project specifications
- OSHA/HSE

#### Skill in:

- Applying heat shrink
- Basic computers
- Creating service loops
- Dressing wire
- Soldering
- Cutting wire
- Applying barrier strips

---

## Domain C: Installing Audiovisual Systems

### Task 4: Distribute Audiovisual

#### Knowledge of:

- Equipment manifests and delivery schedules
- What to do in the event of equipment damage
- Obtaining delivery confirmations
- Documenting serial numbers of equipment
- Client and company policies and procedures
- Reading and using floor plans
- Hazards
- Projects

- Proper loading techniques to avoid equipment damage
- Site restrictions
- Timelines
- Wrapping, banding, palleting equipment
- Safe bending and lifting techniques
- OSHA/HSE
- Loading techniques

#### Skill in:

- Basic math
- Interpersonal communication

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



- Reading and writing
- Written communication

---

**Domain C: Installing Audiovisual Systems**  
**Task 5: Mount Audiovisual Equipment**

**Knowledge of:**

- Acceptable substructures for specific purposes
- Installing mounting brackets and mounting hardware
- Customized millwork/joinery for audiovisual installations
- Installing equipment
- Preparing cables for termination
- Terminating cables
- Connecting power to equipment
- Dressing cables
- Measuring distances
- Calculating weight capacities
- Blocking (or noggin)
- Cleaning supplies and techniques
- Concrete construction methods and materials
- Correct locations for placing fasteners
- Correct mountings for components
- Engineered lumber
- Fasteners (capabilities, limitations, options, etc.)
- Glue laminated construction methods
- Metal frame construction methods and materials

- Pipes
- Powder actuated tools
- Rigging
- Safe working loads (weights) and safety margins
- Seismic restraints
- Slotted channel and accessories (unistrut)
- Steel construction methods and materials
- Tensile and shear strengths
- Threaded rods
- Throw distances
- Wood frame construction methods and materials
- OSHA/HSE
- Safety zones
- Work site safety

**Skill in:**

- Measuring distances
- Basic math
- Calculating weights
- Interpersonal communication
- Cutting
- Drilling

---

**Domain C: Installing Audiovisual Systems**  
**Task 6: Terminate Cables**

**Knowledge of:**

- Preparing cable ends
- Connectors
- Applying insulation (heat shrink, sleeving, etc.)
- Attaching connectors
- Labeling cables
- Identifying fiber optic terminations (sc/st/fc)
- Crimping techniques (BNC, spade lugs, bell caps, ferrules)
- Compression techniques

- Fiber optic cable types (single mode, multi-mode) and sizes
- Fiber optic technology (transceivers)
- Fiber optic terminology
- Handling techniques for fiber optic cable
- Insulation displacement
- Interduct (conduit type for fiber optic)
- Limitations of fiber optic cables and connectors
- Linear compression techniques
- Stripping techniques
- RoHS compliance requirements

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- Signal types
- Testing fiber optic cable for signal continuity and attenuation
- OSHA/ESE
- Eye protection
- Fiber optic technology safety protocols
- RoHS

#### Skill in:

- Applying heat shrink
- Soldering
- Cutting wire

---

### Domain C: Installing Audiovisual Systems

#### Task 7: Configure Network Attached Components (ISDN, IP, POTS, etc.)

#### Knowledge of:

- Network topologies
- Loading network configurations into equipment
- Preparing AV Internet protocol tables
- Broadband service (cable, satellite, etc.) and service protocols
- Network connectivity
- Basic router configuration (e.g., Linksys WRT54G)
- Cable types/specifications
- Classifications of IP addresses (routable, unroutable)

- Testing network connectivity (ping)
- Testing terminations
- Network equipment
- Network systems
- Network terminology
- Projects
- Wireless network connections

#### Skill in:

- Communicating with subcontractors
- Basic computers
- Interpersonal communication

---

### Domain C: Installing Audiovisual Systems

#### Task 8: Load Control Programs

#### Knowledge of:

- Establishing communications with devices
- Obtaining correct versions of uploadables
- Loading audiovisual programming
- Verifying codes are loaded and saved
- Testing communications to ancillary devices
- Selecting cables
- Downloading firmware updates
- Audiovisual equipment configurations
- Baud rates

- Company policies and procedures for archiving and saving code
- DSP programs
- Firmware (verification, updates, compatibility)
- Obtaining manufacturer updates
- Signal types

#### Skill in:

- Basic computers

---

### Domain C: Installing Audiovisual Systems

#### Task 9: Test the Audiovisual Equipment

#### Knowledge of:

- Operational procedures for audiovisual equipment

- Correct cable connectivity
- Selecting appropriate test equipment and supplies

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- Proper test methods and requirements
- Performing audiovisual tests
- Comparing tests results with specifications
- Troubleshooting AV equipment
- Performing corrective actions to systems
- Calculating anticipated impedance
- Calculating Ohm's Law
- Measuring impedance
- Testing audio DSP
- Testing audio signal paths
- Testing device communications
- Testing limits
- Testing RF signal paths
- Testing speakers
- Testing video signal paths
- Adjusting audio gain
- Anti-static techniques
- Audio gain structures
- Signal processing components (EQ, limiter)
- System functionality
- Vendor policies, phone numbers
- Video system timing
- Wave form monitors and vectorscopes
- Electrical safety

### Skill in:

- Basic computers
- Adjusting basic colour balance display

---

## Domain C: Installing Audiovisual Systems

### Task 10: Complete Initial Calibration of Audiovisual Equipment

#### Knowledge of:

- Calibration standards
- Component adjustments
- Aligning display equipment to system configurations for optimal performance
- Adjusting gain structure for audio
- Adjusting gain structure for video
- Setting user preferences for equipment (power management, signal type, etc.)
- Aiming loud speakers
- Adjusting camera configurations
- Setting limits for equipment (cameras, screens, etc.)
- Setting up lighting (presets, fixture positions, zoning, etc.)
- Setting up assisted listening devices
- Adjusting gain and channel on RF frequencies
- Adjusting microphones for optimal performance
- Timing video and audio systems
- Adjusting equalization of rooms (sound systems, etc.)
- Setting data baud rates
- Calculating anticipated impedance
- Calculating Ohm's Law
- Determining speaker taps
- Measuring impedance

- Measuring signal levels
- Reading schematics
- Anti-static techniques
- Audio gain structure
- Distributed audio systems
- Equalization of a room
- Project requirements and specifications
- Signal processing components (EQ, limiter)
- Signal to noise ratio
- System functionality
- Video system timing
- Wave form monitor and vectorscope
- Electrical safety

#### Skill in:

- Basic computers
- Interpersonal communication
- Reading and writing
- Adjusting audio DSP
- Adjusting audio gain
- Adjusting basic colour balance displays
- Adjusting video system timing
- Setting speaker taps
- Setting and locking limits
- Setting RF Channels
- Aiming and positioning microphones

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



---

## Domain D: Perform Systems Close Out

### **Task 1: Demonstrate to Client or Client's Representative that System Performs to Specifications**

#### **Knowledge of:**

- Generating punch lists/deficiency lists
- Resolving punch lists and deficiency lists
- Substantial completion sign-offs
- Project timelines
- System functionality
- 

- Troubleshooting techniques
- Test equipment

#### **Skill in:**

- Basic computers
  - Interpersonal communication
  - Reading and writing
- 

## Domain D: Perform Systems Close Out

### **Task 2: Obtain Project Completion Sign Off from Client or Client's Representative**

#### **Knowledge of:**

- Deliverables (inventory lists/assets register, manuals, remotes, as-builts, etc.)
- Warranty coverages
- Maintenance schedules
- Project timelines

- System functionality

#### **Skill in:**

- Basic computers
  - Interpersonal communication
  - Reading and writing
- 

## Domain D: Perform Systems Close Out

### **Task 3: Provide Training on Equipment Operation**

#### **Knowledge of:**

- Training techniques
- Training attendance logs
- Company policies and procedures
- Customer expectations

- System functionality

#### **Skill in:**

- Basic computers
  - Verbal Communication
- 

## Domain E: Conducting Ongoing Project Responsibilities

### **Task 1: Perform Site Clean-up**

#### **Knowledge of:**

- Debris removal
- Cleaning protocols and methods

- Appropriate cleaning products for equipment
  - Site protocols (dumpsters, rules, etc.)
- 

## Domain E: Conducting Ongoing Project Responsibilities

### **Task 2: Complete Daily Progress Reports**

#### **Knowledge of:**

- Reporting procedures for damaged, defective or missing equipment
- Reporting procedures for man-hours
- Reporting procedures for additional expenses
- Estimating time to project completion

- Reporting procedures for project delays, design deficiencies, changes in scope of work and requests for additional resources
  - Company policies and procedures
  - Project tasks
  - Vendor policies and phone numbers
- 

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation

**Skill in:**

- Basic computers
- Interpersonal communication
- Planning
- Observation
- Reading and writing

---

**Domain E: Conducting Ongoing Project Responsibilities****Task 3: Coordinate with Other Contractors****Knowledge of:**

- Construction progress meetings
- Reporting procedures for discrepancies and coordination issues
- Responsibilities of various contractors

- Scheduling practices

**Skill in:**

- Communicating with other contractors
- Interpersonal communication

---

**Domain E: Conducting Ongoing Project Responsibilities****Task 4: Conduct Field Engineering****Knowledge of:**

- Creating field mark-ups (design changes, site conditions, etc.)
- Making design modifications to accommodate site issues
- Making installation decisions in response to assessments of sites
- Communicate changes to engineering, project managers and others
- Adequacy of substructures
- Blocking (or noggin)
- Cleaning supplies and techniques
- Company policy and procedures
- Concrete construction methods and materials
- Correct locations for placing fasteners
- Correct mountings for components
- Engineered lumber
- Equipment capabilities
- Fasteners (capabilities, limitations, options)

- Glue laminated construction methods
- Completing markups
- Metal frame construction methods and materials
- Pipes
- Powder actuated tools
- Rigging
- Safe working loads (weights) and safety margins
- Seismic restraints
- Slotted channel and accessories (unistrut)
- Steel construction methods and materials
- Tensile and shear strengths
- Threaded rods
- Wood frame construction methods and materials

**Skill in:**

- Communicating with other contractors
- Interpersonal communication
- Basic math

---

**Domain E: Conducting Ongoing Project Responsibilities****Task 5: Repair Audiovisual Systems****Knowledge of:**

- Troubleshooting system problems
- Making recommendations for problem resolution
- Implementing problem resolutions
- Calculating signal levels

- Measuring impedance
- Testing audio DSP
- Testing audio signal paths
- Testing device communications
- Testing limits
- Testing RF signal paths

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



- Test speakers
- Testing video signal paths
- Company policy and procedures
- Conferencing products
- Control systems
- Customer expectations
- DSP
- Individual system component capabilities
- Service agreements and warranties

- Signal to noise ratios
- System functionality
- Troubleshooting techniques
- Vendor policies

**Skill in:**

- Interpersonal communication
- Adjusting audio gain
- Adjusting basic color balance displays

---

## Domain E: Conducting Ongoing Project Responsibilities

### Task 6: Maintaining AV Systems

**Knowledge of:**

- Maintenance requirements for systems
- Maintenance schedules
- Obtaining parts and supplies for maintenance
- Performing maintenance activities
- Performing system/component functionality tests
- Submitting maintenance documentation

- Cleaning procedures and products
- Manufacturer's recommended maintenance schedules
- Service agreements and warranties
- Testing practices

**Skill in:**

- Interpersonal communication

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation

---



## Appendix B: CTS-I Exam Application

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Exam Application: Certified Technology Specialist–Installation

### Section I: Summary of Eligibility Requirements

In order to be considered eligible to sit for the CTS-I certification examination, applicants must meet the following requirements:

- *Hold current certification as a general CTS*
- *Be in good standing with the Certification Committee (no ethics cases or sanctions)*
- *Provide documentation verifying a minimum of two years' audiovisual industry experience in audiovisual installation as verified by signature of owner, supervisor, HR department OR provide redacted documentation such as W2s, performance reviews, client letters etc.*
  - a) Provide verification of attainment of skills in the following technical areas:
    - i) termination
    - ii) rack build
    - iii) projector setup and installation
    - iv) audio setup and EQ
    - v) mounting equipment
    - vi) customer service relations

Applicants are strongly urged to refer to the examination content outline found in [Appendix A](#) of the CTS-I Candidate Handbook.

Candidates for the CTS-I examination administered by the InfoComm independent Certification Committee must complete all sections of this application in full and submit the application with the required examination fee.

The application must be MAILED or FAXED to the Certification Office at the following address:

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030

Contact information for additional information:

1.800.659.7469 or +1.703.273.7200

+1.703.991.8259 Fax

[certification@infocomm.org](mailto:certification@infocomm.org)

[www.infocomm.org](http://www.infocomm.org)

**Note:** *Candidates for the CTS-I examination administered by the Certification Committee must complete all sections of this application with payment to be considered for eligibility to take the CTS-I examination. Application must be MAILED or FAXED to the Certification Office.*

**Note:** *Candidates are strongly encouraged to carefully review the CTS-I Candidate Handbook available online at [www.infocomm.org](http://www.infocomm.org) BEFORE applying to obtain important information regarding preparing for the exam, the application and testing process including all fees, as well as the exam content outline blueprint and references for the exam.*

**This page is provided for your reference. Do not return with application.**

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Section II: Applicant Information

First (Given) Name \_\_\_\_\_ Last (Family) Name \_\_\_\_\_

**Important Note:** Name must match your government issued identification that will be presented at the testing center. Failure to do so will result in being denied exam access.

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

State/Province \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ FAX \_\_\_\_\_

Email (please print) \_\_\_\_\_

## Section III: CTS-I Eligibility Requirements

CTS-I candidates are required to provide documentation in three areas:

- CTS Certification In Good Standing (please attach copy of your certificate)
- Minimum of two (2) years of audiovisual industry experience per Section IV below
- Meet the experience requirements per Section V below

## Section IV: Employment History

Please complete employment history, latest experience listed first. CTS-I requirement is a minimum of two years of AV experience

**Most Recent Employer (1)** \_\_\_\_\_

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

State/Province \_\_\_\_\_ Country \_\_\_\_\_

Supervisor Name \_\_\_\_\_ Supervisor Title \_\_\_\_\_

Employment Dates \_\_\_\_\_ Your Title \_\_\_\_\_

Employer Phone \_\_\_\_\_ Employer Email \_\_\_\_\_

**Employer (2)** \_\_\_\_\_

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

State/Province \_\_\_\_\_ Country \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



Supervisor Name \_\_\_\_\_ Supervisor Title \_\_\_\_\_

Employment Dates \_\_\_\_\_ Your Title \_\_\_\_\_

Employer Phone \_\_\_\_\_ Employer Email \_\_\_\_\_

**Employer (3)** \_\_\_\_\_

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

State/Province \_\_\_\_\_ Country \_\_\_\_\_

Supervisor Name \_\_\_\_\_ Supervisor Title \_\_\_\_\_

Employment Dates \_\_\_\_\_ Your Title \_\_\_\_\_

Employer Phone \_\_\_\_\_ Employer Email \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Section V: Verification of Experience Requirements

Each of the following experiences in related skill areas must be verified by either a recognized verifier (see list of recognized individuals online at [www.infocomm.org/cts](http://www.infocomm.org/cts)) or copy of course completion for a course recognized in that skill area (see list of recognized courses online at [www.infocomm.org/cts](http://www.infocomm.org/cts)). For courses that are not included on the recognized list, the applicant must attach the course title and learning objectives related to the skill being verified along with the course completion and submit with the application.

**Note:** *Regarding verifying experience: In serving as a verifier for the applicant, the verifier understands that he/she is attesting to the applicant's experience in the specific technical areas as listed below.*

**Note:** *Experience sections below are based upon the candidate having at least the minimum experience and proficiency necessary to meet the experience requirements. Parameters defining the minimum experience are provided below as guidelines.*

Verification checkboxes must be checked, signatures in place and copies of applicable documents attached as a requirement of eligibility.

### Experience/Education Verification Required

Verification must be by one of the following methods:

- A Recognized Verifier from the list at [www.infocomm.org/cts](http://www.infocomm.org/cts) must check boxes and sign in the appropriate sections below. **Generally a recognized verifier will be one of the following:** current CTS-I, supervisor, manufacturer approved instructor or an audiovisual program instructor.

OR

- Candidate must attach copy of a course completion from a Recognized Course found in the listing at [www.infocomm.org/cts](http://www.infocomm.org/cts) for the appropriate sections below. For a course not previously recognized candidate must submit a copy of the course title and learning objectives along with a copy of the course completion document.

**Note:** *For courses that are not included in the recognized list in addition to the course completion copy, the applicant must attach course title and learning objectives for the skill area with the application.*

**This page is provided for your reference. Do not return with application.**

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## ► Termination Experience - Verification Checklist

- Solders connectors resulting in a shiny appearance with good wetting and flow
- Applies heat shrink for proper strain relief and to prevent future short circuiting
- Selects correct termination materials
- Measures for appropriate connectivity

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

## ► Rack Build Experience - Verification Checklist

- Builds racks from technical drawings
- Manages power cables so that equipment can be efficiently removed for service
- Grounds rack
- Maintains proper signal separation

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## ► Projector Setup and Installation Experience - Verification Checklist

- Permanently install projector and adjust display setting resulting in an image with correct geometry
- Calculates and applies throw distances for specific projector installation

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

## ► Audio Setup and EQ Experience - Verification Checklist

- Utilizes test equipment to measure for ambient room noise and determine sound pressure levels
- Sets the gain and equalizes the audio system
- Measures signal-to-noise ratio at various test points in an audio system

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## ► Mounting Equipment Experience - Verification Checklist

- Mounts AV equipment
- Follows safety practices in mounting equipment
- Mounts AV equipment from technical drawings

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

## ► Customer Relations Experience - Verification Checklist

- Responds to customer inquiries with appropriate explanations and supported by industry knowledge
- Generates correspondence and reports detailing technical issues and explanations

### Verification by (check one):

- Recognized Verifier** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts)):

Print Name/Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

- Recognized training course** (from listing at [www.infocomm.org/cts](http://www.infocomm.org/cts))

*A copy of the course completion must be attached. For a course not recognized, applicant must attach course title and learning objectives.*

Course Completion Date \_\_\_\_\_ Recognized Course Name \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Section VI: Documentation of Experience

*This section must be completed and signed if the candidate chooses to verify experience by employer. If you choose not to have your employer verify experience, you must provide alternate documentation of two years audiovisual design experience. Examples would include redacted W2s, evaluations, client letters or similar documents.*

Current accreditation standards under which the CTS-I is accredited require that a candidate for the CTS-I examination must validate that they have met the prerequisite of possessing a minimum of two (2) years of installation experience in the area of audiovisual installation. If the verification of experience by employer option is chosen by the candidate, this form must be signed by the employer, supervisor, or HR department of the candidate's employment as verification as noted below:

I hereby affirm that the following candidate \_\_\_\_\_ (Print candidate's name) for the CTS-I examination has met the requirement of a minimum of two (2) years of audiovisual experience in audiovisual installation. I also understand that applicants accepted as candidates and those certified as CTS-I have agreed to a Code of Ethics and Conduct and that providing false information on an exam application may result in an investigation and subsequent sanctions against the candidate by the Certification Ethics Committee that could include suspension of privileges as an applicant to apply for an InfoComm certification exam for a set period of time or suspension/removal of an existing certification.

Verifier's Name (Please print) \_\_\_\_\_  
Title or position (Please print) \_\_\_\_\_  
Company \_\_\_\_\_  
Contact phone \_\_\_\_\_ Contact email \_\_\_\_\_  
Signature \_\_\_\_\_  
Date signed \_\_\_\_\_

### Section VII: Applicant Special Accommodations Request

**Please check No or Yes:**  No  Yes

If yes, you must complete the Request for InfoComm Examination Special Accommodations AND Healthcare Documentation of Disability Related Needs forms in the CTS Candidate Handbook online at [www.infocomm.org/cts](http://www.infocomm.org/cts) and mail to the Certification Office a minimum of 45 days prior to your desired testing date.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Section VIII: Agreement and Signature

By checking the box and by typing my name in the space provided, I agree to the following:

- I authorize the Certification Committee to obtain any background information necessary to verify the accuracy and completeness of my responses to all questions contained herein.
- I understand that the Certification Committee may audit candidate applications to verify experience or education either prior to or after an examination is taken, or after the results are announced. I agree to cooperate with such audit and further understand that providing false information for verification of experience or education, or having others to do so is a violation of the Certified Technology Specialist Code of Ethics and Conduct and may result in sanctions.
- I hereby certify that I have read all portions of this application and the CTS-I Candidate Handbook and believe myself to be in compliance with all admission policies related to the CTS-I examination. The information I submit on this application and any documents I have enclosed or forwarded are complete, true and correct to the best of my knowledge and belief.
- I agree to immediately inform the Certification Office of all changes to the information included in this application while I am an applicant, and for as long as I am certified by the Certification Committee.
- I hereby attest that I am personally signing either in person or electronically if by other than mailed application, and that I also will be the individual taking the CTS-I examination I have applied for, solely for the purposes of CTS-I certification. I further understand that I am prohibited from transmitting information regarding examination questions or content in any form to any person or entity, and understand that failure to comply with this prohibition may result in my certification being revoked and/or legal action being taken against me.
- I have read, understand, and agree to be bound by the certification - related policies and procedures and Certified Technology Specialist Code of Ethics and Conduct promulgated by the Certification Committee. I understand and agree that my failure to abide by the Certification Committee's policies and procedures and Certified Technology Specialist Code of Ethics and Conduct shall constitute grounds for rejection of my application or denial or revocation of my certification.
- I understand that if successful I will be listed in the online professional certification registry; however if in the future if I should not want to continue to be listed in the online registry, that I should send an email request stating such to [certification@infocomm.org](mailto:certification@infocomm.org) or fax/mail the request to the Certification Office. I understand that even if my credentials are not listed in the online directory InfoComm will continue to verify credentials upon request.
- I agree to give the Certification Committee, and its agents and contractors permission to contact me by U.S. mail, electronic mail, facsimile, or through other media on matters which InfoComm believes may be of importance to me. If I should wish to be taken off the certification mailing list in the future, I will send an email request stating such to [certification@infocomm.org](mailto:certification@infocomm.org), or fax/mail the request to the Certification Office.

I have read, understand, and agree to the terms above.

Please check the box and personally sign or type name and date below as your electronic signature of agreement if this application is submitted other than by mail.

**Applicant Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Section IX: Examination Fees and Payment Method

### Americas:

\$400 USD InfoComm Member \$500 USD  
Non-member (Plus any applicable taxes)

### Other Locations:

\$420 USD InfoComm Member \$520 USD  
Non-member (Plus any applicable taxes)

Please note that applications will not be processed unless accompanied by a payment for the correct amount, signatures and any attachments required as a part of the eligibility requirements.

### **Please indicate form of payment:**

I have enclosed a check or money order payable to InfoComm International for the appropriate amount as listed above.

**OR**

I authorize InfoComm International to charge my credit card \$ \_\_\_\_\_ USD

Credit Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Type of Credit Card:  Visa  MasterCard  American Express

Print Name of Cardholder \_\_\_\_\_

Signature of Cardholder \_\_\_\_\_

Print Name of Applicant if Different from Cardholder \_\_\_\_\_

**OR**

By wire transfer:

Wire transfers are acceptable methods of payment, however, added processing time and additional bank fees may occur as a result. The applicant is responsible for any bank fees incurred.

I have sent a wire transfer to InfoComm International in the amount of \$ \_\_\_\_\_ USD

Wire transfer #: \_\_\_\_\_

### **Mail, fax, or email this application to the following address:**

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix C: Special Accommodations

### ***Request for InfoComm (CTS, CTS-D, CTS-I) Exam Special Accommodations***

If you have a disability covered by a national disabilities program (e.g. Americans with Disabilities Act), and you wish to request accommodation for a qualified disability, please complete this form AND the Documentation of Disability Related Needs Form so your request can be processed efficiently. The information you provide and any documentation regarding your disability and your need for accommodation in testing will be treated with strict confidentiality.

#### **Applicant Information**

Name \_\_\_\_\_  
Address 1 \_\_\_\_\_  
Address 2 \_\_\_\_\_  
City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_  
State/Province \_\_\_\_\_ Country \_\_\_\_\_  
Phone \_\_\_\_\_ FAX \_\_\_\_\_  
Email (please print) \_\_\_\_\_

#### **Special Accommodations**

I request special accommodations (please indicate in the table below), for the (preferred date of exam) \_\_\_\_\_ administration of the Certified Technology Specialist (CTS, CTS-D or CTS-I) Exam. I understand that the InfoComm Certification Committee may require a fee to defray the costs of these accommodations, as may be permitted by law.

Please provide (check all that apply):

- Accessible testing site
- Special seating
- Reader
- Extended testing time (time and a half)
- Separate testing area
- Other ADA special accommodations as authorized by a qualified medical professional (please specify): \_\_\_\_\_

Applicant's Signature: \_\_\_\_\_ Date \_\_\_\_\_

Healthcare Provider's Signature: \_\_\_\_\_ Date \_\_\_\_\_

Return this form with your exam application information to the Certification Office **a minimum of 45 days prior to the date you wish to take the exam**. This request will not be processed if it is not accompanied by a properly completed InfoComm Exam Documentation of Disability Related Needs Form.

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix D: Healthcare Documentation

### ***InfoComm (CTS, CTS-D, CTS-I) Exam - Healthcare Documentation of Disability Related Needs***

This section must be completed by a licensed healthcare provider who has been personally involved in the diagnosis or treatment of the disability for which you are requesting accommodation, OR an educational or testing professional who has previously provided you with testing accommodations similar to those requested. This form must accompany the *Request For InfoComm (CTS, CTS-D, CTS-I) Exam Special Accommodations Form*.

#### **Professional Documentation**

I have known \_\_\_\_\_

Exam Applicant

since \_\_\_\_\_

Date

in my capacity as a \_\_\_\_\_

Professional Title

The applicant has discussed with me the nature of the exam to be administered. It is my opinion that because of this applicant's disability described below, he/she should be accommodated by providing the special arrangements listed on the reverse side.

Comments \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

License # (if applicable) \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation

---



Return this form with your exam application information and the "Request for InfoComm (CTS, CTS-D, CTS-I) Exam Special Accommodations" to the Certification Office a minimum of 45 days prior to the date you wish to take the exam.

Please call the InfoComm Certification Office, if you have any questions about procedures in completing this application.

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200  
Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)  
[www.infocomm.org](http://www.infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix E: Code of Ethics and Conduct

### ***Certified Technology Specialist Code of Ethics and Conduct***

- ▶ As a Certified Technology Specialist, I understand that my personal standards of honor and integrity must, at all times, be above reproach and I must conduct myself in a manner that reflects favorably on my profession. By doing so, I will strive to create an ethical climate within my organization, my industry and the community of clients which I serve, building honesty and trustworthiness in all of my relationships and ensuring my reliability in performing my assigned responsibilities.
- ▶ As a Certified Technology Specialist, I pledge to be truthful and accurate in what I say, do and write. I will exhibit constructiveness and cooperation in all of my working relationships, ensuring adherence to the law at all times. I will efficiently use resources and will not reveal facts, data or information obtained in connection with services rendered without the prior consent of the client or employer - except as authorized or required by law.
- ▶ As a Certified Technology Specialist, I will demonstrate a commitment to excellence in all aspects of my profession and will consistently promote and encourage the highest level of ethics within the industry.
- ▶ As a Certified Technology Specialist, I will avoid compromise of professional judgment by conflicts of interest.
- ▶ As a Certified Technology Specialist, I will act in a manner free of bias with regard to religion, ethnicity, gender, age, national origin or disability.
- ▶ As a Certified Technology Specialist, I will undertake only those assignments for which I am competent by way of education, training and experience. I will not misrepresent or permit misrepresentation of my own or associates' academic or professional qualifications or exaggerate my degree of responsibility for any work. Furthermore, I will admit and accept my own errors when proven wrong, refraining from distorting or altering the facts in an attempt to justify my decisions.
- ▶ As a Certified Technology Specialist, I will use every opportunity to improve public understanding of the role of the communications industry. I will also have due regard for the physical environment and for public safety, health and well-being. If my judgment is overruled under circumstances where the safety, health, property or welfare of the public may be endangered, I will notify my employer, client and/or such other authority as may be appropriate.
- ▶ As a Certified Technology Specialist, I will always strive to maintain proficiency by updating technical knowledge and skills.
- ▶ As a Certified Technology Specialist, I understand that the certificate, logo and marks are the property of InfoComm. I agree to return the certificate upon request to the Certification Committee.
- ▶ As a Certified Technology Specialist, I will uphold and follow all policies and procedures required by the Certification Committee to remain in good standing, and abide by the Code of Ethics and Conduct.

***Failure to abide by the Code of Ethics and Conduct shall constitute grounds for denial or revocation of my certification.***

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix F: Renewal Application

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## CTS Renewal Application All CTS Designations

Name \_\_\_\_\_ Date \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Country \_\_\_\_\_

Email \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

### I am renewing my:

- General CTS
- General CTS & CTS-I
- General CTS & CTS-D
- CTS-D & CTS-I

### Instructions:

Complete all sections of this form. An incomplete application may delay your renewal. Please be sure to check your application. Have you:

- Downloaded the most recent application from [www.infocomm.org/renewal](http://www.infocomm.org/renewal)?
- Printed neatly so your application is legible?
- Included copies of required documents?
- Signed the application?
- Provided current contact information?
- Included payment?

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Ways to earn Renewal Units:

InfoComm Certification Renewal Unit (RU) Options Chart*		
Activity	RUs Available	Maximum RUs Allowed
Approved Non- Manufacturer Onsite or Online Course, Webinars	1 RU per 1 hour of contact time	30 RUs No limit (Only once per 24 months for the same course)
Approved Manufacturer Onsite or Online Course	1 RU per 2 hours of contact time	30 RUs No limit (Only once per 24 months for the same course)
Approved Book and Evaluation Tool	2 RUs per book and completion of evaluation	6 RUs per 12 months (Maximum of 3 books per 12 months)
Writing an Approved Industry Related and Published Article or White Paper	2 RUs per published article or white paper	6 RUs per 12 months (Maximum of 3 articles or white papers per 12 months)
Industry Related College Course of 3-4 Credit Hours	10 RUs per course	30 RUs No limit (Only once per 12 months for same course)
Teaching an RU Approved Course	1 RU per course hour and 1 RU for preparation per every 2 course hours	30 RUs No limit (Only once per 6 months for same course)
InfoComm Volunteer	3 RUs (per 12 months) for each active volunteer capacity served	3 RUs (per 12 months) for each active volunteer capacity served
<b>30 RUs required in a 3-year period.</b>		
RUs are offered in half (.5) units, based on 30 minutes of contact time rounded to the nearest 30 minutes. For example, 35 minutes = .5 RUs; 45 minutes = 1 RU; and 1 hour and 40 minutes = 1.5 RUs.		

**Note: Renewal Units submitted on the Renewal Application must be within the category guidelines listed above. For a complete list of RU providers and RU approved courses please see our [online RU Provider list](#).**

**This page is provided for your reference. Do not return with application.**

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



I am renewing by successfully completing approved (please check all that apply):

**InfoComm onsite or online courses**

- A transcript of InfoComm registered courses taken by individuals may be found at [www.infocomm.org/renewal](http://www.infocomm.org/renewal).
- **Documentation:** Attach a copy of your InfoComm Transcript

**Non-manufacturer onsite or online courses**

- **Documentation:** Attach the certificate awarded

**Manufacturer onsite and/or online courses**

- **Documentation:** Attach the certificate awarded

**College level courses of 3-4 semester hours that are related to the CTS certification level(s) I hold**

- Courses must be obtained from an accredited institution and courses must relate specifically to the work of the appropriate CTS certified technician level being renewed and must directly enhance the knowledge or skill level of the certificant for the certification being renewed.
- **Documentation:** Official transcript must be provided

**Teaching for InfoComm or other programs approved for renewal units by the InfoComm Certification Committee**

- **Documentation:** Copy of course program indicating instructor, hours, date, etc.

**Serving as a volunteer in some capacity that contributes to further development of the InfoComm Certification Committee certification program**

- Examples include active participation as a subject matter expert, serving on a certification related committee, industry standards committee, InfoComm Board or committee, or similar activities previously submitted to and recognized by the Renewal Committee for consideration of renewal units. Certificants who submit RUs under this category are subject to verification of active participation through InfoComm records.
- You must document your participation and identify the areas in which you have made a significant contribution to the certification program.

**Writing an article or white paper related to an area that is addressed in one of the CTS Exam Content Outlines and is published in an AV trade media or industry related technical book**

- Must be submitted prior to renewal for approval by the Certification Committee
- **Documentation:** Copy of the published article or white paper

**Reading a previously approved industry related book with successful completion of an evaluation tool.**

- **Documentation:** Copy of certificate or successful evaluation results

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.





## Certified Technology Specialist Code of Ethics and Conduct

- As a Certified Technology Specialist, I understand that my personal standards of honor and integrity must, at all times, be above reproach and I must conduct myself in a manner that reflects favorably on my profession. By doing so, I will strive to create an ethical climate within my organization, my industry, and the community of clients which I serve, building honesty and trustworthiness in all of my relationships and ensuring my reliability in performing my assigned responsibilities.
- As a Certified Technology Specialist, I pledge to be truthful and accurate in what I say, do, and write. I will exhibit constructiveness and cooperation in all of my working relationships, ensuring adherence to the law at all times. I will efficiently use resources and will not reveal facts, data or information obtained in connection with services rendered without the prior consent of the client or employer – except as authorized or required by law.
- As a Certified Technology Specialist, I will demonstrate a commitment to excellence in all aspects of my profession and will consistently promote and encourage the highest level of ethics within the industry.
- As a Certified Technology Specialist, I will avoid compromise of professional judgment by conflicts of interest.
- As a Certified Technology Specialist, I will act in a manner free of bias with regard to religion, ethnicity, gender, age, national origin or disability.
- As a Certified Technology Specialist, I will undertake only those assignments for which I am competent by way of education, training and experience. I will not misrepresent or permit misrepresentation of my own or associates' academic or professional qualifications or exaggerate my degree of responsibility for any work. Furthermore, I will admit and accept my own errors when proven wrong, refraining from distorting or altering the facts in an attempt to justify my decisions.
- As a Certified Technology Specialist, I will use every opportunity to improve public understanding of the role of the communications industry. I will also have due regard for the physical environment and for public safety, health and well-being. If my judgment is overruled under circumstances where the safety, health, property or welfare of the public may be endangered, I will notify my employer, client and/or such other authority as may be appropriate.
- As a Certified Technology Specialist, I will always strive to maintain proficiency by updating technical knowledge and skills.
- As a Certified Technology Specialist, I understand that the certificate, logo and marks are the property of InfoComm. I agree to return the certificate upon request to the Certification Committee.
- As a Certified Technology Specialist, I will uphold and follow all policies and procedures required by the Certification Committee to remain in good standing, and abide by the Code of Ethics and Conduct

*Failure to abide by the Code of Ethics and Conduct shall constitute grounds for denial or revocation of certification*

**This page provided for your reference. Please do not return with renewal application.**

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Agreement and Signature

By checking the box and by typing or signing my name in the space provided, I agree to the following:

- I authorize the Certification Committee to obtain any background information necessary to verify the accuracy and completeness of my responses to all questions contained herein.
  - I understand that the Certification Committee may audit renewal applications to verify information provided as part of the application response. I agree to cooperate with such audit and further understand that providing false information for verification of meeting renewal requirements, or having others to do so is a violation of the CTS Code of Ethics and Conduct and may result in sanctions.
  - I hereby certify that I have read all portions of this application and related sections of the CTS Renewal Handbook and believe myself to be in compliance with all policies related to the CTS renewal requirements. The information I submit on this application and any documents I have enclosed or forwarded are complete, true and correct to the best of my knowledge and belief.
  - I agree to immediately inform the certification office of all changes to the information included in this application as long as I am certified by the Certification Committee.
  - I hereby attest that I, the applicant, am signing, either in person or electronically if by other than mailed application.
  - I have read, understand, and agree to be bound by the certification-related policies and procedures and CTS Code of Ethics and Conduct promulgated by the Certification Committee.
  - I understand and agree that my failure to abide by the Certification Committee's policies and procedures and CTS Code of Ethics and Conduct shall constitute grounds for rejection of my application or denial or revocation of my certification.
  - I understand that, if my renewal is successful, I will be listed in the online professional certification directory; however if in the future if I should not want to continue to be listed in the online directory, that I should send an e-mail request stating such to [certification@infocomm.org](mailto:certification@infocomm.org) or fax/mail the request to the Certification Office. I understand that even if my credentials are not listed in the online directory InfoComm will continue to verify credentials upon request.
  - I agree to give the Certification Committee, and its agents and contractors, permission to contact me by U.S. mail, electronic mail, facsimile, or through other media on matters that InfoComm believes may be of importance to me. Should I wish to be taken off the certification mailing list in the future, I will send an e-mail request stating such to [certification@infocomm.org](mailto:certification@infocomm.org), or fax/mail the request to the certification office.
- I have read, understand, and agree to abide by the CTS Code of Ethics and Conduct.

Please check the box and personally sign or type name and date below as your electronic signature of agreement if this application is submitted other than by mail.

Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Payment Information

Please indicate form of payment:

I have enclosed a check or money order payable to InfoComm International for the appropriate amount.

**OR**

I authorize InfoComm International to charge my credit card \$ \_\_\_\_\_ USD

Credit Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Type of Credit Card:  Visa  MasterCard  American Express

Print Name of Cardholder \_\_\_\_\_

Signature of Cardholder \_\_\_\_\_

Print Name of Applicant if Different from Cardholder \_\_\_\_\_

**OR**

By wire transfer:

Wire transfers are acceptable methods of payment, however, added processing time and additional bank fees may occur as a result. The applicant is responsible for any bank fees incurred.

I have sent a wire transfer to InfoComm International in the amount of \$ \_\_\_\_\_ USD

Wire transfer #: \_\_\_\_\_

**I am renewing my:**

- General CTS (\$125.00)
- General CTS & CTS-I (\$125.00)
- General CTS & CTS-D (\$125.00)
- CTS-D & CTS-I (\$250.00)

**Mail, fax, or email this application to the following address:**

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Appendix G: Retest Only Application

### ***Certified Technology Specialist CTS® or CTS-I RETEST ONLY Application***

Candidates RETESTING for the CTS or CTS-I examination administered by Certification Committee must complete all applicable sections of this application along with payment in order to RETEST the CTS or CTS-I examination. This retest application must be mailed or faxed with payment to the InfoComm Certification Office at:

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)  
[www.infocomm.org](http://www.infocomm.org)

**Note:** Candidates RETESTING are strongly encouraged to carefully review the CTS, CTS-D or CTS-I Candidate Handbook again, available online at [www.infocomm.org](http://www.infocomm.org) BEFORE applying to RETEST in order to obtain important information regarding preparing for the exam, the RETEST application and testing process including all fees, as well as the Exam Content Outline and references for the exam.

## Applicant Information

First (Given) Name \_\_\_\_\_ Last (Family) Name \_\_\_\_\_

**Important Note:** Name must match your government issued identification that will be presented at the testing center. Failure to do so will result in being denied exam access.

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

City \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

State/Province \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ FAX \_\_\_\_\_

Email (please print) \_\_\_\_\_

Retesting: CTS\_\_\_ CTS-D\_\_\_ CTS-I\_\_\_ Date of original test:\_\_\_\_\_

Date(s) of previous RETEST if you have previously retested (Maximum of two retests total are allowed):  
\_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



**Special Accommodations Request:**       Yes       No

(If yes, you must complete the Request for InfoComm Examination Special Accommodations AND InfoComm CTS Examination Healthcare Documentation of Disability- Related Needs forms in the CTS Candidate Handbook online at [www.infocomm.org/cts](http://www.infocomm.org/cts) and mail to the InfoComm Certification Office a minimum of 45 days prior to your desired testing date).

## RETEST ONLY Examination Fees

CTS or CTS-I: \$125 USD (plus any applicable taxes); outside of U.S. and Canada - \$145 USD (plus any applicable taxes). *Note: Fees include testing center "seat fees".*

## RETEST ONLY Agreement and Signature

- 1) I authorize the Certification Committee to obtain any background information necessary to verify the accuracy and completeness of my responses to all questions contained herein.
- 2) I understand that Certification Committee may audit candidate applications to verify experience or education either prior to or after an examination is taken, or after the results are announced. I agree to cooperate with such audit and further understand that providing false information for verification of experience or education, or having others to do so is a violation of the CTS Code of Ethics and Conduct and may result in sanctions.
- 3) I hereby certify that I have read all portions of this application and the CTS Candidate Handbook and believe myself to be in compliance with all admission policies related to the CTS examination. The information I submit on this application and any documents I have enclosed or forwarded are complete, true and correct to the best of my knowledge and belief.
- 4) I agree to immediately inform the Certification Office of all changes to the information included in this application while I am an applicant, and for as long as I am certified by Certification Committee.
- 5) I hereby attest that I am personally taking the CTS examination I have applied for, solely for the purposes of CTS certification. I further understand that I am prohibited from transmitting information regarding examination questions or content in any form to any person or entity, and understand that failure to comply with this prohibition may result in my certification being revoked and/or legal action being taken against me.
- 6) I agree to be bound by the certification-related policies and procedures and Code of Ethics and Conduct promulgated by the Certification Committee. I understand and agree that my failure to abide by the Certification Committee's policies and procedures and Code of Ethics and Conduct shall constitute grounds for rejection of my application or denial or revocation of my certification.
- 7) I understand that if successful I will be listed in the online Certification Committee's professional certification registry; however, if in the future I should not want to continue to be listed in the online registry, that I should send an email request stating such to [certification@infocomm.org](mailto:certification@infocomm.org) or fax/mail the request to the Certification Office. I understand that even if my credentials are not listed in the online directory, InfoComm will continue to verify credentials upon request.
- 8) I agree to give the Certification Committee and its agents and contractors permission to contact me by U.S. mail, electronic mail, facsimile, or through other media on matters which the Certification Committee believes may be of importance to me. If I should wish to be taken off the InfoComm mailing list in the future, I will send an email request stating such to [certification@infocomm.org](mailto:certification@infocomm.org), or fax/mail the request to the InfoComm Certification Office.

I have read, understand, and agree to the terms above. (Please check box and personally sign or type name and date below as your electronic signature of agreement if this application is submitted other than by mail.)

Name \_\_\_\_\_ Date \_\_\_\_\_

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.

# CTS-I Candidate Handbook

Certified Technology Specialist-Installation



## Payment Information

Retest fees: \$125 USD (Americas), \$145 (Other locations)

I have enclosed a check or money order payable to InfoComm International for the appropriate amount as listed above.

**OR**

I authorize InfoComm International to charge my credit card \$\_\_\_\_\_ USD

Credit Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Type of Credit Card:  Visa  MasterCard  American Express

Print Name of Cardholder \_\_\_\_\_

Signature of Cardholder \_\_\_\_\_

Print Name of Applicant if Different from Cardholder \_\_\_\_\_

**OR**

By wire transfer:

Wire transfers are acceptable methods of payment, however, added processing time and additional bank fees may occur as a result. The applicant is responsible for any bank fees incurred.

I have sent a wire transfer to InfoComm International in the amount of \$\_\_\_\_\_ USD

Wire transfer #: \_\_\_\_\_

**Mail, fax, or email this application to the following address:**

InfoComm International, Attn. Certification Office  
11242 Waples Mill Rd., Suite 200, Fairfax, VA 22030  
1.800.659.7469 or +1.703.273.7200  
+1.703.991.8259 Fax  
[certification@infocomm.org](mailto:certification@infocomm.org)

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix H: Sample Score Report - Pass

### InfoComm CTS-I Examination Score Report - Pass

Congratulations on successfully passing the CTS-I examination!

Scores on the CTS-I Examination range from 0-500 with a minimum score of 350 required for passing. You will be receiving your certificate package from the InfoComm Certification Office within 4-6 weeks. Additional information is also provided in the CTS-I Candidate Handbook at [www.infocomm.org/cts](http://www.infocomm.org/cts).

#### Exam Information

Candidate Name-  
Exam Title-  
Exam Date-  
Candidate ID-  
Test Site-

#### Score Information

Score Range – (0-500)  
Minimum Passing Score- (350)  
Score Achieved- (scaled score)  
Result- (Pass)

If you have any questions or concerns regarding your testing experience, score report, or exam process please email InfoComm at [certification@infocomm.org](mailto:certification@infocomm.org).

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.



## Appendix I: Sample Score Report - Fail

### InfoComm CTS-I Examination Score Report- Fail

Unfortunately, you were not successful in your attempt to pass the CTS-I examination. Please do not be discouraged, it is not unusual for some candidates to have to retake the examination before attaining the CTS-I certification. Many candidates utilize the required waiting period for retesting to review the domains and obtain additional training or education where their performance was low. Noted below is your performance within each domain which you can use to prepare for retesting.

Scores on the CTS-I Examination range from 0-500 with a minimum score of 350 required for passing.

Please refer to the InfoComm Candidate Handbook at [www.infocomm.org/cts](http://www.infocomm.org/cts) for further information regarding scoring and retesting.

#### Exam Information

Candidate Name-  
Exam Title-  
Exam Date-  
Candidate ID-  
Test Site-

#### Score Information

Score Range – (0-500)  
Minimum Passing Score- (350)  
Score Achieved- (scaled score)  
Result- (Fail)

#### Domain Performance

Domain A- (percent correct)  
Domain B - (percent correct)  
Domain C - (percent correct)  
Domain D - (percent correct)  
Domain E - (percent correct)

Because the number of items in each domain varies, it is not possible to average the domain scores in order to determine your overall percentage correct score. If you have any questions or concerns regarding your testing experience, score report, or exam process please email InfoComm at [certification@infocomm.org](mailto:certification@infocomm.org).

NOTE: Applicants and stakeholders should download the most up-to-date free edition of the CTS-I Candidate Handbook that may include important policy and procedure updates by going to the InfoComm website at [www.infocomm.org](http://www.infocomm.org). Date of this version is 1/26/2012.