



**Test and Certification Guide
for SDRs based on SCA
Part 1: SCA**

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Test and Certification Guide for SDRs based on SCA Part 1: SCA

1 Executive Summary

SDR technology provides the technical prerequisites for porting waveform software from one SDR platform to another. The porting effort is dependent to a high degree on the availability of agreed architectures and interfaces, a significant part of which require standardization. A product that is certified indicates that it conforms to the architectures and interfaces of the standard.

This document focuses on the test, evaluation and certification of Software Communications Architecture (SCA) based radio platforms. The SCA is an open architecture framework that provides designers information on how elements of hardware and software are to interoperate synchronously within a Software Defined Radio (SDR). The SCA governs the structure and operation of SDRs, enabling waveforms to be programmed in radios, running applications, and networked into an integrated system. A Core Framework (CF) must be implemented on every hardware set, providing an essential part of a standard operating environment (OE). Interoperability among radio sets is enhanced due to the same waveform application software, which can easily be ported to all radio sets.

There are already certification activities of SDRs within the JTRS procurement program of the US DoD. Only a minor part of the relevant documents from the JTRS program have been published. Only a small part of the required documents from the JTRS program are available for the international community.

On an international level however there are currently no standardization and certification activities defined. The objective of this document is to start activities for certification of SDRs on an international level and pave the way for next steps.

This guide aims to define a generic certification process, suitable for various certification activities in the context of SDR and to apply this generic process to a first certification topic. This first topic shall be SCA conformance, which appears to be the most mature topic for the time being.

This guide is planned as the first in a series of documents. Other documents in this series may deal with APIs, security and other topics relevant for SDR certification.

This guide consists of two parts:

- The first part proposes a generic certification process, suitable for certification activities in the context of Software Defined Radio (SDR).

- The second part applies this generic process to SCA conformance certification.

The proposed generic certification process is divided into two phases. The first phase is the preparation of the certification process and only has to be done once. The various roles within this process are defined to be

- Specification Body: to provide input to the Standards Body (or eventually to the Definition Body)
- Standards Body: to develop and maintain the standard
- Definition Body: to interpret the standard and provide the certification criteria
- Test Developers: to develop the test procedures and test tools
- Test Labs: to perform the validation tests
- Accreditation Bodies: to grant the accreditation to the test labs
- Certification Body: to grant the compliance

It is proposed that several test labs for SDR certification shall exist in different countries as well as in multinational organizations, forming a network of test labs.

Within this network each test lab shall

- Be Independent
- Use synergies e.g. in the context of creating test procedures and test tools
- Be multiple accredited

The test labs within the network can be government labs, industrial labs or labs of multinational organizations. Which lab is performing which certification topic depends on the capabilities of the respective lab as well as on the paradigms of the stakeholders. A set of rules for workshare and mutual recognition shall be established.

The second phase is the execution of the Certification Process, where the actual evaluation of each unit under test in the test lab is performed. The execution phase ends with issuing the certificate.

The second part describes how the proposed, generic certification process can be applied to the certification of SCA compliance of platforms (operating environment OE) and waveforms.

The proposed process on SCA certification shall leave room for industry self-evaluation as well as a shortened certification process in case of re-certification.

A proposed starting point for SCA certification is to reuse material like the Certification Criteria or Test Procedures from the US JTRS procurement program.

2 Considerations on Test and Certification of SDRs

2.1 The Problem

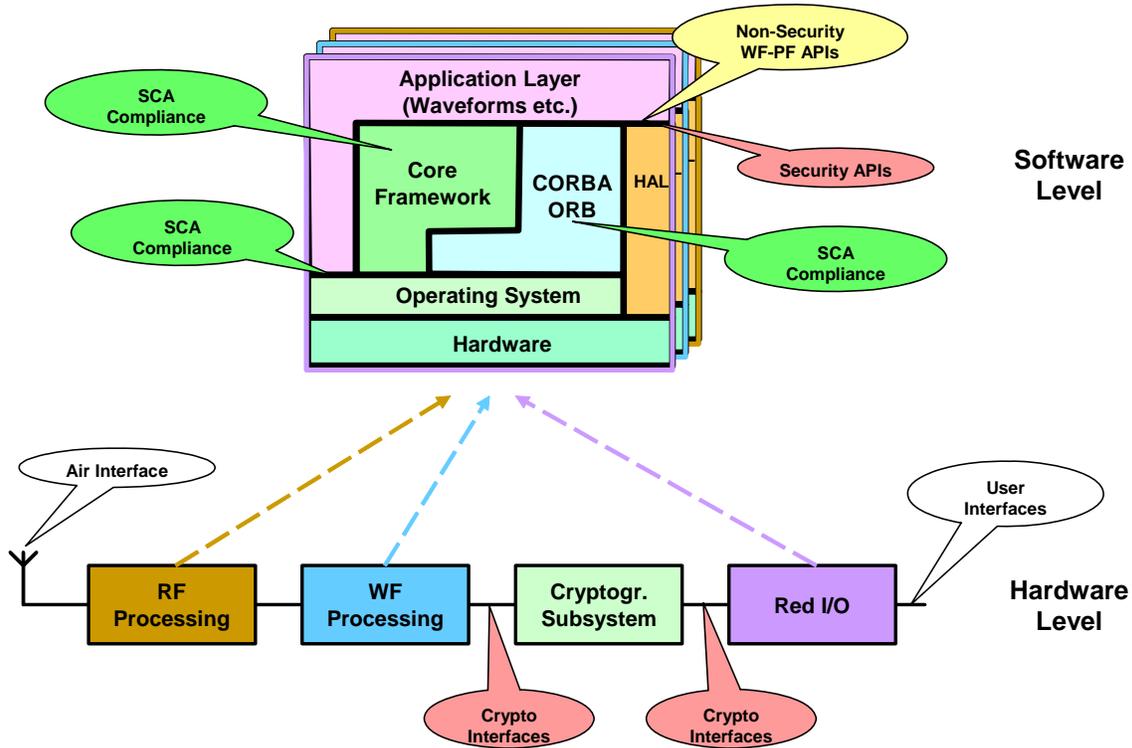


Figure 1: Certification Scene Around an SDR

2.1.1 Introduction

SDR technology provides the technical prerequisites for porting waveform software from one SDR platform to another. The porting effort depends to a high degree on the availability of agreed architectures and interfaces, which require standardization. A certification of products can prove that architectures and interfaces are in fact in accord with the standard.

There are already certification activities of SDRs in the context of the JTRS program of the US DoD. Only a minor part of the relevant documents from the JTRS program have been published. The existing procedures within the JTRS program are not suited for international application for various reasons.

On an international basis however there are no standardization and certification activities currently defined. The objective of this document is to start activities for certification of SDRs on an international basis and pave the way for next steps.

Figure 1 shows the range of potential certification topics. The green colored topics are those which are mature enough to be covered by this document. There are others, e.g. the API area or the security area, which also are of high relevance but are not considered in this document either because there is missing information or they must be under national/alliance control.

Figure 2 shows various topics of certification in the SDR area with a colored classification.

Legend:

green	mature; within scope of the SCA Certification Guide
yellow	important for portability; not mature, for later consideration
red	under national/alliance sovereignty
grey	not recommended or not applicable

Platform	
Topic	Criteria
Operating System OS	Posix AEP
ORB	minimumCorba
Core Framework CF	SCA
Security	tbd Specification e.g. red/black separation
Security APIs	tbd Specification
WF-PF APIs	tbd Specification
Performance	Comp. power, memory, latency, RF parameters etc.
Intraplatform Interfaces	Intraprocessor interfaces etc.

Waveform	
Topic	Criteria
SCA compliance	SCA
WF-PF APIs	tbd Specification
Security	tbd Specification e.g. TRANSEC
Security APIs	tbd Specification
Portability	e.g. porting evaluation
Intrawaveform APIs	e.g. PHY/Mac -- NET

Security Module	
Topic	Criteria
Security	tbd Specification e.g. Key stream generation, encyphering, bypass
Security APIs	tbd Specification

Radio	
Topic	Criteria
Security	tbd Specification e.g. tamper, tempest
Interoperability (Air Interface)	WF specification
User Interface	e.g. Audio IF specification
Crypto Interface	e.g. physical IF specification

Figure 2: Certification Topics in the SDR Area

2.1.2 Scope of SCA Test, Evaluation and Certification

There are several types of SCA related test and evaluation which could be certified for levels of compliance, including:

- SCA compliance with specification requirements; need to consider provisions for handling optional requirements and potential divergence of specifications and versions.
- Portability assessment of an application implementation (i.e. waveforms).

- Communications interoperability (i.e. waveforms, networks).
- Information Assurance assessment with respect to defined requirements and relevant threat models.
- Performance assessment which can include both quantitative analysis, qualitative appraisal of RF signal characteristics, battery life and other usability factors.

SCA compliance testing is the foundation for the other types of testing identified above and will be the focus of the remainder of this document. Consideration needs to be given to compliance with respect to multiple versions of SCA specifications, backwards compatibility, scope and relevance of changes from existing specifications.

2.1.3 Scope of the document

The aim of this project is to define a generic certification process for application in various certification topics of SDR. This generic process then is applied to the SCA certification process of SDRs for the international community.

Objects for the certification are

- Platform software
- Waveform software
- Components of these two entities (e.g. the Core Framework)

Requirements of international stakeholders for test and certification of SDRs are derived as far as is necessary for this objective. One example for such a paradigm is that for a national military customer security details must be kept undisclosed.

The process to be defined will make use of the experience from the public mobile radio business.

In the mobile radio business the sequence of the certification process is:

- Identify the relevant standard
- Derive a test specification
- Identify test scenarios and test cases
- Develop test cases
- Validate test tools and test platforms
- Perform accreditation of test labs
- Verify the test cases

It is intended to adapt this certification process according to SCA strictures.

Recommendations for the following questions will be given:

- What is the proposed certification structure?
- How does this structure support the requirements of the potential stakeholders?
- How can national and international institutions cooperate while maintaining their individual requirements?
- How can test cases be derived?
- What test tools (platform test tool, waveform test tool, test platform etc.) are required?

To accomplish this, existing material from questionnaires, workshops, presentations etc. will be evaluated, and used where applicable.

Not included in this project are details of test cases or test procedures. Also not considered here are all questions of interoperability at the RF interface.

2.2 Stakeholders, Paradigms and Operating Model Considerations

2.2.1 Stakeholders

There is a diverse set of stakeholders for SCA test, evaluation and certification, including:

- Product and system users (the mission communicators).
- Governments and associated procurement authorities (those who specify the requirements and procure the products and systems).
- Radio Providers (developers and manufacturer of SCA based products and systems).
- Third Party software developers (i.e., Applications providers).
- Tools Providers (support development, manufacturing and testing).
- Others (i.e., independent test and certification organizations).

Though in detail each of these stakeholders has a particular perspective and set of objectives, at a very high level they all have a similar set of requirements which is to meet:

- Low cost
- Time schedule
- Performance

- Security

In more detail this leads to the following strong requirements on the certification process:

The definition of the certification process shall ensure, that

- Portability is improved significantly compared with non-standardized solutions
- Certification costs are minimized
- Time delay for the products to hit the market is tolerable
- Industry's intellectual property is protected
- National security is maintained
- National sovereignty is maintained
- Enough flexibility is given to handle tailored solutions
- Transparency is ensured in the certification process

2.2.2 *Value Statement*

The value of SCA based product test, evaluation and certification is primarily focused on providing assurance of compliance with established standards as a foundation for enabling interoperable communications. Users and procurement authorities have confidence that the products and systems acquired to accomplish mission operations will meet expectations. Radio providers are assured that their products meet requirements of the customer community for both current and future communications needs. In addition, radio providers can potentially leverage certified implementations across multiple platforms to reduce aggregate development costs and time-to-market.

2.2.3 *Operating Model Considerations*

There are several candidate models for SCA test, evaluation and certification across multiple types of entities including the following:

- Government (Nations, Multi-National Organizations)
- Radio Provider
- Independent Third Party (i.e. SDR Forum)
- Various combinations of the above

A set of constituent roles and interfaces will be defined for SCA test, evaluation and certification in Part 2 of this document. These roles can be applied in different manners to achieve specific

objectives. Consideration needs to be given to the following criteria when choosing an operating model for SCA test, evaluation and certification, including:

- Consistency and assurance of results (certified compliance should be the same across the global marketplace).
- Protection of National, Organizational and Industry interests (i.e., security, interoperability).
- Protection of Radio Provider investment and intellectual property - needs to be a viable business model for radio providers, which includes relatively frequent and periodic updated releases of platform software.

Benchmarking shall not be part of SCA testing, evaluation and certification; the focus should be on compliance.

“Black Box” (product and system level) vs. “White Box” (component level) testing considerations have very different levels of intrusion into Intellectual Property, non-disclosure protection and licensing terms.

The ultimate objective is to deploy capability to the field for users to accomplish mission objectives in a timely manner – if the SCA test, evaluation and certification process is too costly or takes too long to complete then flow of capability to the field will be slow, potentially minimizing the benefits and value of Software Defined Radio solutions.

Sufficient test and evaluation capacity will be required to ensure that backlogs of radio products and systems do not develop. Consideration needs to be given to levels of automation which can be applied to the SCA test and evaluation process to ensure reasonable levels of efficiency. In addition, avoidance of duplicative effort also needs to be considered both from an execution perspective, and a capital investment perspective.

3 Proposal of a Generic Certification Process

This chapter covers the definition of a certification process for various certification areas in the context of Software Defined Radio. This general process will be applied to the certification of products according to the SCA 2.2.2.

The tasks to be performed to achieve certification of a device under test can be divided into a phase with non recurrent actions to install the process and recurrent actions to perform the validation and certification of the respective device under test:

- Certification Preparation Phase
- Certification Execution Phase

Remark: If examples within the description of the generic process are given for clarity, these examples often have been taken from the certification of SCA conformity.

3.1 Terms

When describing the certification processes it is very important to minimize conflicts which may come up when using terms. Generally, an inflation of terms shall be avoided and existing terms shall be used as much as possible. On the other hand conflicts in interpretation must be minimized.

Therefore, definitions mainly from ISO/IEC 17000 are used and complemented by some others which are necessary.

The target is to stay as close as possible to ISO/IEC standards and guides.

A collection of the terms used throughout this document is given in the glossary (chapter 5).

3.2 Certification Preparation Phase

The certification preparation can be carried out for the platform (in the scope of this document equivalent with the Operating Environment OE) or for the waveform.

3.2.1 Various Roles in the Certification Preparation Phase

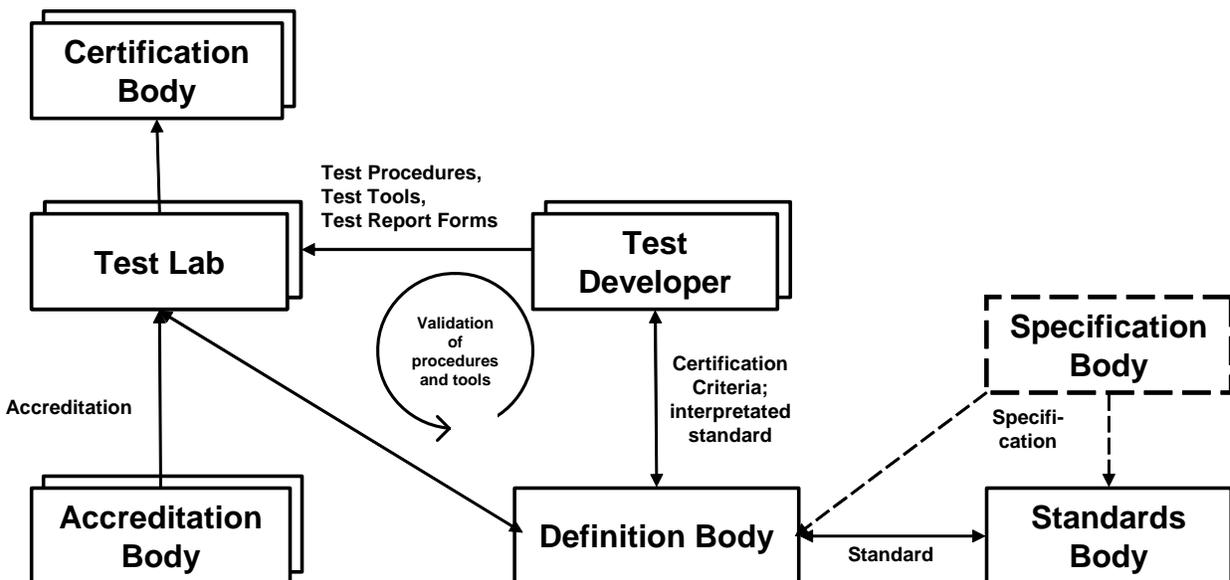


Figure 3: Roles and Interactions in the Certification Preparation Phase

In this chapter the various roles within the Certification process are identified (Fig. 3). Which organizations shall fill which role is not proposed. The proposed roles could be performed by different entities, such as Governments, Radio Providers, and independent third parties. It may be the case that one organization will take several roles. This is an implementation question to be answered for each specific certification process.

Some roles may potentially be executed by more than one entity (e.g. in different countries). In Fig. 3 this is indicated by showing two boxes behind each other.

There are two groups of roles: the first group deals with the definition of the standard, including the certification criteria (Standards Body, Specification Body and Definition Body), the second group executes the testing activities (Test Developer, Test Lab and Accreditation Body).

Standards Body

The role of the Standards Body is to issue and maintain the standard. The standard may be developed by the Standards Body itself. Alternatively the Standards Body may also take a specification and convert it into a standard.

Specification Body

The Specification Body is responsible for development and distribution of specifications containing radio system requirements. This may include reference to existing standards (i.e., SCA Specifications) in entirety or in part, or augmenting where applicable for a specific application needs (i.e., specific National interests).

Definition Body

The role of the Definition Body is to interpret the standard, provide clarifications if necessary and to derive the certification criteria.

Test Developer

The Test Developer will develop Test Procedures, Test Tools and the Test Report Forms for usage in tests by the Test Labs. Test Procedures and Tools shall be based on the certification criteria that the Definition Body has defined (hardware or software). Eventually there is more than one Test Developer.

Test Lab

The Test Laboratory is a facility that provides controlled conditions to achieve reproducible test results and has the credibility to perform the tests. The test laboratory shall have accreditation for performing validation tests. It will use the procedures and tools developed by test developer. During the Certification Installation process there will be an interaction of the Definition Body, the Test Developer and the Test Lab in order to agree on all discussion points which may come up during the development of the Test Procedures and the Test Tools.

Certification Body

The Certification Body has the right to grant the certificate. It is a national issue to decide which organization is the relevant Certification Body.

Accreditation Body

The Accreditation Body provides accreditation to the Test Labs. Accreditation is a certification of competency, authority, or credibility of a Test Lab. The accreditation process ensures that their certification practices are acceptable, typically meaning that they are competent to test and certify third parties, behave ethically, and employ suitable quality assurance. An Accreditation Body is an official national or multinational organization. There shall be more than one Accreditation Body (potentially one for each nation).

3.2.2 Steps in the Certification Preparation Phase

3.2.2.1 Standard Provision

A standard is a specification, which is under the configuration control of a recognized Standards Development Organization.

Each evaluation and certification process requires the availability of a standard or a specification (having the character of a quasi-standard).

The Standard has to be available in a stable, reproducible form (document) in well defined editions.

For a clean international evaluation and certification process it is highly desirable that the standard is under the control of an international host (Standards Body). e.g. the SDR Forum recently has endorsed the SCA 2.2.2, as it was published by the US DoD.

The standard or specification, used for international certification, should be the same for all organizations in all nations, participating in this certification process. If there is a need for an adaptation of the standard to get a better match for certain applications this should preferably be achieved by profiling the standard (see 2.2.2.2).

However it shall be possible to perform the certification process also with other standards, which may be derived from the original SCA.

3.2.2.2 Certification Criteria

The Certification Criteria tell what to evaluate. The question how to do this is left to the Test Procedure.

The Certification Criteria are derived from the standard and represent the specified requirements, which shall be verified during the tests.

These certification criteria represent the minimal criteria, covering the essential requirements necessary to support portability. It should be agreeable by all interested parties.

The Certification Criteria shall be supported by the delivery of test scenarios and have to be detailed enough to avoid any ambiguities.

The Definition Body to perform this process step shall be an international organization like the SDR Forum, where the expertise is available to perform this task. There might be a situation

where the Definition Body also has to be under national control; however, this is not recommended because this does not support the idea of portability.

3.2.2.3 Test Procedure Development

The Test Procedure is the detailed and complete description of how to perform the required tests.

The Standard in conjunction with the Certification Criteria will be the basis for the development of the test procedures.

From the Certification Criteria, test cases will be derived and implemented in the test procedures eventually considering one or more test tools.

Test procedure development requires a high level of expertise both in the topic of the SCA and its components as well as in the process of writing a test procedure.

Development of the Test Procedure is performed by the Test Developer. Usually the role of the Test Developer is covered by industry. Development contracts have to be put in place.

The Test Procedures should be the same for the various test labs which will be accredited.

3.2.2.4 Test Tool Development

The Test Tool Development will be based on the certification criteria and the test procedures.

Test tools shall be developed by industry under a placed contract.

Software tools should be common for the various Test Labs. One possibility would be to take the JTAP tool from US, eventually modify it and apply this tool for all OE certifications. If there are good reasons, labs should also be free to choose other test tools as long as they are certified to be based on the common test criteria.

3.2.2.5 Test Procedure and Test Tool Validation

Test procedures and test tools need to be validated. The validation is done via a cooperating action by the Test Developer, the accredited Test Labs and the Definition Body.

Test Procedures developed for a particular part of the Standard should be reviewed by the Definition Body to ensure interpretations from the Certification Criteria are correctly incorporated into the procedure.

The test procedure, tools and form will be validated by the Definition Body.

3.2.2.6 Test Labs Accreditation

Accreditation of Test Labs shall state the ability, assets and authority of the respective test lab to perform the conformity assessment and to issue the test report.

If the Test Lab is a national lab, the accreditation shall be issued by the respective national authorities. Accreditation should follow any accreditation guidelines provided by the Definition Body where practical, to ensure that the test lab will support the harmonized certification guidelines (certification criteria etc) the Definition Body may have established.

In addition a National Test Lab can (and should) be accredited by the authorities of other nations (cross accreditation). With the accreditation the nation confirms the acceptance of certificates issued by the respective Test Lab.

If multinational organizations are involved they should also perform cross accreditation.

3.2.3 Network of Test Labs

Various countries have the ability and the desire to build up and maintain their own SDR Test Labs. These Test Labs may differ in their capabilities for testing because of financial aspects, national interests or existing expertise.

Different Test Labs may include the capability to test and certify

- SCA conformance of platforms
- SCA conformance of waveforms
- APIs
- Waveform interoperability
- Platform performance
- Etc.

Today there are indications that in the future there could be four to six SDR Test Labs in Europe. In principle these could be government test labs, industrial labs or labs of international organizations with cross accreditations respectively.

These labs should create a network of labs in the sense that they share a common set of test methodologies, procedures and test tools, eventually supplemented by national or other special procedures. These labs shall mutually accept certifications from each other.

Each Test Lab requires an accreditation by one or more national Accreditation Bodies. A Test Lab of a certain country for example shall be accredited by its national Accreditation Body plus a number of Accreditation Bodies of other nations, which may use this Test Lab for certification of

their radios (Multiple Accreditation). Thus certification done by one of the Test Labs in the network of labs shall be recognized by other nations or international organizations.

Rules for this Multiple Accreditation have to be worked out and agreed upon.

3.3 Certification Execution Phase

The certification process can be carried out for the platform (in the scope of this document this is equivalent with the Operating Environment OE) or for the waveform.

3.3.1 Various Roles in the Certification Execution Phase

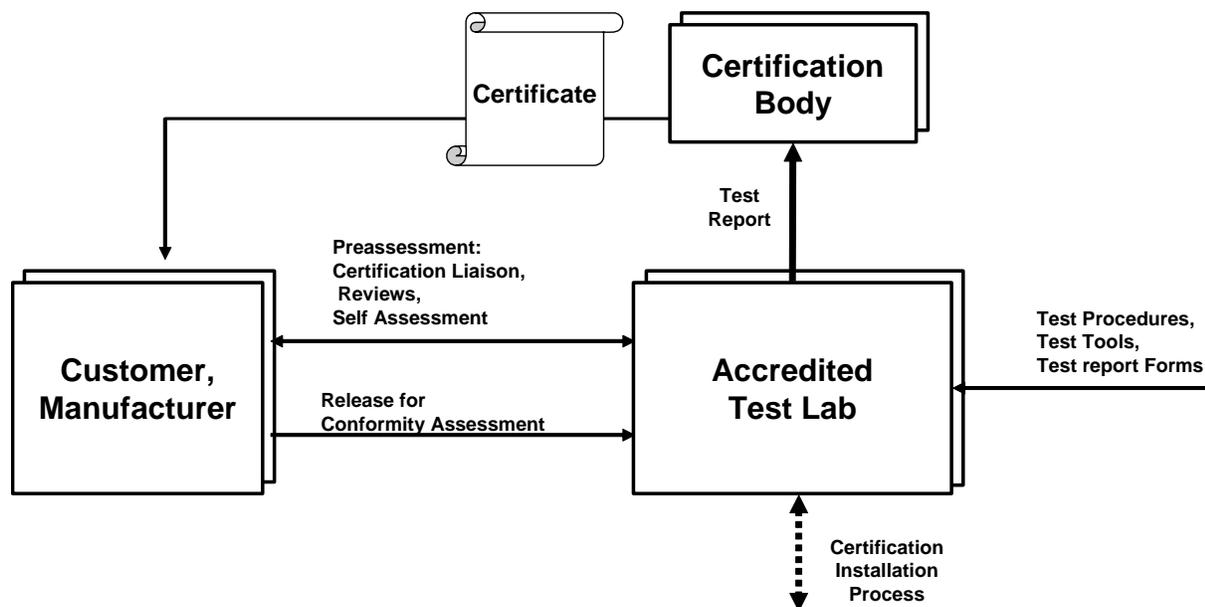


Figure 4: Roles in the Certification Execution Phase

3.3.2 Steps in the Certification Execution

3.3.2.1 Preassessment

In order to avoid late No-Gos in the certification process, a liaison shall be established between the developing entity and the testing entity in a very early phase to agree on certification requirements. Regular reviews will keep the process alive.

Partial self assessment by the manufacturer will mitigate the certification effort to be done by the Test Lab. The area and level of the self assessment has to be agreed.

It may be beneficial for the Test Lab to perform interim testing before the formal release for conformity testing. During this pre-assessment phase, if issues with the test procedures or the test tools arise, or if tests have been missed, these issues may undergo investigation and eventually be remedied.

3.3.2.2 Release for Conformity Assessment

With the release for Conformity Assessment the customer (e.g. the manufacturer) formally delivers the device under test for assessment. At this point all the preparations including exchange of early requests must be completed. The customer is not involved any longer.

3.3.2.3 Conformity Assessment

During Conformity Assessment the device under test is assessed by the Test Lab using the test Procedures and Test Tools. The Conformity Assessment ends with the delivery of the test reports to the Certification Body.

A successful Certification Assessment need not require 100% pass of the specified tests in the test procedures. The criteria to pass the Certification Tests will be issued together with the Certification Criteria

The possibility of self-evaluation of the producing industry shall be considered to accelerate the process. In this case the producing industry is acting as the Test Lab, eventually monitored by the authorities.

An abbreviated process may be defined for re-certifications.

3.3.2.4 Issue of Certificate

The certificate is evidence that the device under test has been successfully assessed.

It shall be issued by the Certification Body after inspection of the Test Reports.

4 The SCA Certification

4.1 The SCA Specification

Currently the Software Communications Architecture SCA 2.2.2 cannot be considered a real standard for the international community. The SCA 2.2.2 as published by the JTRS program has the character of a specification, defined mainly for national (US) purposes. However, the SCA 2.2.2 specification has been adopted by the SDR Forum (Ref. 4) and can be used for international certification activities.

Profiling the SCA e.g. for lite versions can be an appropriate way to come to a better fit in special domains.

4.2 SCA Certification Criteria

4.2.1 Platform SCA Certification Criteria

The following shall apply when defining the Certification Criteria for an SCA certificate:

- Concentrate on criteria which are relevant for portability
- Use as much of published US material as possible
- Interpret and tailor for international purpose

It is recommended to start with the operating environment requirements list from the JTRS program “JTEL-RQMTS-SCA2.2.2_OE_Reqts” (see also Ref. 5). This is an open document and includes also a list with the certification criteria of the operating environment.

4.2.2 *Waveform SCA Certification Criteria*

As for the certification of the operating environment the following shall apply:

- Concentrate on criteria which are relevant for portability
- Use as much of published US material as possible
- Interpret and tailor for international purpose

It is recommended to start with the application requirements list from the JTRS program ” JTEL-RQMTS-SCA2.2.2_App_Reqts” (see also Ref. 6). This is an open document and includes also the certification criteria of the applications.

4.3 **SCA Test Procedures, Test Tools and Test Platforms**

As stated in chapter 3.2.2.3, the Test Procedures are the complete and detailed description of how to perform the required tests. The Certification Criteria, derived from the standard, will be the basis for the Test Procedures.

The Test Procedures from the JTRS program are not released for the time being. Should these become available within a reasonable time frame they should be used as a starting point for certification. If not, it would be necessary to develop the test procedures using the material available.

Test Procedures should incorporate the use of existing test tools (i.e. JTAP by JPEO/JTEL) where possible to maximize integrity and efficiency of testing for a particular part of the standard. Currently JTAP is the only known SCA 2.2.2 test tool for certification of the operating environment and the waveform. However, it is not released by JTRS yet.

JPEO/JTEL does have other software test tools called the Waveform Test Tool WTT and the Data Reduction Parser DRP. However, both software applications apply and test SCA requirements for version 2.2 only and are considered legacy.

If the JTAP tool is not released within a reasonable time frame, development of comparable tools by industry may be considered. In this case, those commercially available test tools should be used. Any third party tools should be listed and provided to the Definition Body for approval.

Test tools, such as JTAP, that allow for the inclusion of custom implementations are an example of how the Test Developer may implement the test methods required by a specific certification criterion, which may deviate from the implemented criteria. The Test Developer should check the feasibility to implement such a specialized test mechanism in the existing tool. The implementation of these custom test methods should also be validated by the Definition Body.

Test Platforms should be able to support the basic elements of the Operating Environment, i.e CORBA communication, file system, Naming Service. They should have sufficient resources to be able to host more than one waveform simultaneously and provide for communication of modulated data between waveforms.

5 Glossary

Term	Definition
Accreditation	Third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks (ISO/IEC 17000: 2005)
Accreditation Body	Authoritative body that performs accreditation (5.6) NOTE: The authority of an accreditation body is generally derived from government. (ISO/IEC 17000: 2005)
Certificate	Document stating the successful performance of the Conformity Assessment
Certification	third-party attestation related to products, processes, systems or persons (ISO/IEC 17000: 2005)
Certification Body	National body or body related to international organizations, formally issues the Certification after receiving the evaluation results (Test Report)
Certification Criteria	Certification Criteria are derived from the standard and represent the specified requirements, which shall be verified during the tests
Conformity Assessment	Demonstration that specified requirements relating to a product, process, system, person or body are fulfilled. Conformity assessment is a series of three functions that satisfy a need or demand for demonstration that specified requirements are fulfilled: <ul style="list-style-type: none"> • selection; • determination; and • review and attestation

	Conformity assessment activities can be characterized as “firstparty”, “second-party” or “third-party”. (ISO/IEC 17000: 2005)
Conformity Assessment Body	Body that performs conformity assessment services (ISO/IEC 17000: 2005)
Definition Body	Body to define the Certification Criteria Data Base and to perform the validation of tools and procedures
Device under Test	Device that is undergoing the evaluation by the Test Lab (e.g. radio platform, waveform, complete radio or software component)
First Party Conformity Assessment Activity	Conformity assessment activity that is performed by the person or organization that provides the object (ISO/IEC 17000: 2005)
Inspection	Examination of a product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements (ISO/IEC 17000: 2005)
Procedure	Specified way to carry out an activity or a process (ISO/IEC 17000: 2005)
Self Assessment	Term used as a synonym for First Party Conformity Assessment Activity as defined by ISO/IEC 17000: 2005
Specified Requirement	Need or expectation that is stated NOTE: Specified requirements may be stated in normative documents such as regulations, standards and technical specifications. (ISO/IEC 17000: 2005)
Standard	Specification, which is under the configuration control of an recognized Standards Developing Organization
Standards Body	Body to define and maintain a standard
Test Case	The specific implementation of a Method of Test on a Means of Test.
Test Developer	Entity to develop test procedures and test tools, used by the test labs to perform, assessment of Certification Criteria
Test Lab	Term used as a synonym for Conformity Assessment Body as defined by ISO/IEC 17000: 2005

Test Report	Report of the results of a test according to the test procedure
Test Report Form	Form of the test report
Test Tool	Tool, used to perform certification assessment of some or all the certification criteria
Testing	Determination of one or more characteristics of an object of conformity assessment, according to a procedure (ISO/IEC 17000: 2005)
Third-party conformity assessment activity	Conformity assessment activity that is performed by a person or body that is independent of the person or organization that provides the object and of user interests in that object (ISO/IEC 17000: 2005)
Validation	To declare that a document or tool is according the requirements

6 References

1. ISO/IEC 17000: (2005) Conformity assessment ; Vocabulary and general principles
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3. JTRS Standard, “Software Communications Architecture Specification,” Version 2.2.2, 15 May 2006 (<http://sca.jpeojtrs.mil/downloads.asp?ID=2.2.2>).
4. SCA 2.2.2 Endorsement SDRF-08-R-0006-V0.6.0; Document of the SDR Forum
5. JTEL-RQMTS-SCA2.2.2_OE_Reqts as of 15 Jan. 2008, published by JPEO
6. JTEL-RQMTS-SCA2.2.2_App_Reqts as of 7 July 2007, published by JPEO