



**Reference Implementation
Software Communications Architecture 2.2
Request for Proposals**

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Reference Implementation Software Communications Architecture 2.2 (RI-JTel-SCA22) Request for Proposals

January 22, 2004 - Official Date of Posting on Website to be inserted here.

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Re: SCA Reference Implementation
 Call For Proposals
 Reference Implementation and Certification
 Software Communication Architecture (SCA) 2.2

1 Background

The SDR Forum's role includes encouraging development of SDR technologies and promoting educational activities to encourage deployment of reconfigurable radios.

To further that agenda, SDR Forum wishes to make a JTel certified reference implementation of SCA 2.2 publicly available on the SDR Forum Web Site.

SDR Forum previously funded Communications Research Centre Canada (CRC) to develop a Java based reference implementation of SCA 2.1 in 2002. Since then the SCA specification has evolved from SCA 2.1 to SCA 2.2.

In addition, the JTRS community has developed a certification process at their JTel laboratory, in which compliance of an implementation to the SCA requirements and evaluation of the degree to which SCA recommendations are also followed can be assessed. In addition, multiple vendors are developing equipment that

is compliant to the SCA requirements, and other vendors are developing waveforms that meet these requirements.

Utilizing the JTel certified version of SDR Forum's JTRS SCA v2.2 reference implementation as a strong recommendation of industry standardized interfaces, and examples of standard industry practice, will encourage sophisticated waveforms, Core Frameworks, Operating Environments, Hardware Abstraction Layers, and Waveforms to utilize common interface structures, thereby enabling significant improvements in waveform portability to various hardware platforms, to various operating systems, and a broad range of applications.

2 Goals and Objectives

In order to update SDR Forum's current version of the JTRS SCA v2.2 reference implementation and to assure its compliance to the JTRS SCA standards, SDR Forum seeks proposals for a JTel certified reference implementation of the SCA 2.2 (RI-JTel-SCA22).

Once adopted, SDR Forum shall make RI-JTel-SCA22 available to the industrial community through its web site. No license to Intellectual Property Rights or payment of royalties or other fees shall be required in connection with the use and/or demonstration of RI-JTel-SCA22 and any associated derivative works thereof. For purposes hereof, "Intellectual Property Rights" means any and all patent, copyright, trade secret and other rights in intellectual property anywhere in the world.

Upon adoption, SDR Forum shall own the copyright to RI-JTel-SCA22 and, to the extent RI-JTel-SCA22 is based on Intellectual Property Rights held by third parties, SDR Forum shall require the contributing party to secure such license as may be necessary to enable members of the industrial community to use and demonstrate RI-JTel-SCA22 without a license and without paying any royalties or other fees.

As a reference implementation, RI-JTel-SCA22 shall demonstrate to the industrial community example(s) of best practice of architecture, development, coding, and documentation principles in conjunction with SCA based implementation.

RI-JTel-SCA22 must be certified by the JTel as SCA 2.2 compliant. Included with the RI-JTel-SCA22 shall also be design documentation that shows traceability of design to the SCA requirements, and other design documentation detail of use to the software development community. Also included in the design documentation shall be the JTel test and evaluation documentation. A pre-certified version is expected to be released while RI-JTel-SCA22 is completing the certification process.

In order to prevent large-scale dissemination of a non-certified core framework implementation, all software and accompanying documentation delivered to SDR Forum prior to the RI-JTel-SCA22 successfully completing certification by the JTEL as SCA 2.2 compliant will only be made available to SDR Forum members and staff. The pre-certification software and documentation will be made available in a similar manner to other "member only" content. After completion of certification, the RI-JTel-SCA22 and documentation shall be made publicly available, free of any royalty or other fee.

A demonstration of the RI-JTel-SCA22 shall also be performed. The scope of this demonstration is to be described in the offer's proposal.

3 Request for Proposals

This RFP constitutes a request for proposals for a JTel certified reference implementation of SDR Forum's current version of JTRS SCA v2.2. This RFP becomes officially released as of the date of its posting on the SDR Forum web site, and proposals become due within 30 days of this official release.

4 Contract Evaluation

SDR Forum will establish a team of proposal evaluators. This team of evaluators will establish a selection criteria from which to choose which proposals will be negotiated. Selection criteria will include amongst other things:

- 1) Delivery Schedule
- 2) Cost effectiveness
- 3) Value to the Industry
- 4) Ability to provide a JTel certified reference implementation of SDR Forum's current version of JTRS SCA v2.2
- 5) Ability to provide support to answer industry questions
- 6) Ability to support upgrades to the next release of SCA 2.X or SCA 3.0, should it be made public prior to submission of the proposal
- 7) Quality of documentation offered
- 8) Demonstrated ability to perform development, publication, and demonstration.
- 9) Agreement to provide SDR Forum the copyright to publish documents relating to RI-JTel-SCA22 on the SDR Forum Web site, including freedom from constraints with respect to any Intellectual Property Rights therein (no patents or data rights apply to the published material)
- 10) Choice of implementation language
- 11) Choice of reference platform

SDR Forum will hold all proposals confidential until award. Proposals from offerers that are not selected will not be made public. SDR Forum will review all offered proposals, negotiate with one or more selectees, and make awards within 120 days of the official RFP posting. Upon submission of any proposal, SDR Forum shall own the all copyrights thereto and, to the extent any such proposal is based on Intellectual Property Rights held by third parties, SDR Forum shall require the contributing party to provide such licenses as may be necessary for SDR to evaluate the proposal, and if adopted, to enable members of the industrial community to use and demonstrate the implementation of that proposal without any license and without paying any royalties or other fees.

5 Proposal Content and Format

All proposals are due 30 days after official release of this RFP on the SDR Forum web site.

All proposals must also include:

- a) specification of the reference implementation the proposer is offering: (RI-JTel-SCA22)
- b) date of submission and period of validity for the proposal
- c) description of all proposed deliverables, documentation and source code
- d) description of coding standards
- e) description of UML diagrams
- f) description of how the JTel certification process will be obtained and performed

- g) documentation available and planned for delivery to the JTel
- h) payment plan associated with each deliverable milestone
- i) discussion of, or source of any cost sharing
- j) detailed development schedule
- k) schedule for each deliverable milestone
- l) development method
- m) method for validation
- n) method for demonstration
- o) description of method of providing industry support (if any)
- p) description of tools required by a user who wishes to utilize RI-JTel-SCA22 or reproduce the demonstration
- q) method for oversight and progress review by SDR Forum committee
- r) data rights transfer statement; representations that neither the offerer's contribution nor the resulting reference implementation (if SDR Forum adopts the proposal) infringe or will infringe any third party Intellectual Property Rights; warrantee and certification that no Intellectual Property Rights of, or obligation to pay royalties or other compensation or fees to, the offerer or any third party is, or will be, bound into use of RI-JTel-SCA22
- s) Curriculum Vitae of critical personnel
- t) description of proposing organization
- u) Name, address, phone number, fax, email for Contractual Interface point of contact
- v) proposed warrantee (documentation updates)

6 Deliverables

The vendor shall deliver incremental and final versions of the following according to his proposed milestone plan:

- a. Code convention
- b. Source code of SCAv2.2 Core Framework
- c. Source code of simple demonstration application
- d. Design documentation of the SCAv2.2 Core Framework (including UML documentation)
- e. SCA domain profile documentation (XML, IDL)
- f. Document describing platform SW/HW requirements
- g. Document describing the installation procedures
- h. Document containing the instructions to run the demonstration application
- i. JTel documents for the assessment of the SCAv2.2 Core Framework
- j. JPO documents for the JTel certification of the SCAv2.2 Core Framework
- k. requirements traceability crossreference
- l. demonstration to the SDR Forum community

All deliverables shall include tracking item reference code to trace each deliverable item to the corresponding item description from the offerer's proposal. All items shall be delivered in soft copy format to:

Contract RI-JTel-SCA22
attention: Allan Margulies
Chief Operating Officer
SDR Forum
1616 17th Street

Suite 264
Denver CO 80202

7 Contract

All contracts awarded under this RFP will be subject to terms and conditions set forth in a definitive final agreement mutually acceptable to the vendor and SDR Forum and will provide for payment on a firm fixed price basis. Progress payments will be negotiated that reflect delivered value to the SDR Forum, where all requirements have been met.

SDR Forum does not guarantee that any response to this RFP will result in a contract, or that any contracts will be awarded. SDR Forum may also choose to award more than one award should there be several adequate proposals each with unique value. SDR Forum does have available resources set aside for this activity, and intends to perform this work.

All deliverable documentation will be in English. Machine readable documentation must be based on standard tools popularly available throughout the radio development and software industry. Microsoft Office, Adobe Acrobat, Rational Rose UML Model, shall be used for deliverable documentation.

8 Glossary

Acronym	Definition
CF	Core Framework
CRC	Communications Research Center (Canada)
JTel	JTRS Technology Laboratory
JTRS	Joint Tactical Radio Systems
OE	Operating Environment
RFP	Request For Proposals
SCA	Software Communications Architecture
SDR	Software Defined Radio
WF	Waveform