SCA Pass: SCA Architecture Conformance Verifier

Automated testing platform as a dynamic testing method for the SCA 4.1 conformance requirements that necessitate the execution of the waveform under test on a SCA 4.1 Test Platform, as specified by the Joint Tactical Networking Center (JTNC) and the Wireless Innovation Forum (WInnF).

Overview

- Extensible environment for the construction, organization, execution, and summary of automated, reproducible conformance tests of SCA 4.1 architecture standard
- Uses semantic technology (AI) to determine relevant SCA requirements, Units of Functionality (if not already selected in the conformance claim), and Test Procedures
- Delivers a clear separation of test description from the test execution
- Concurrently executes and monitors multiple Test Events of a Test Plan
- Allows the Test Events to be paused/stopped, exported to a local file system, and later restored and restarted
- Provides explanations for both failed and unverified requirements with links to relevant aspects of the SCA 4.1 specification
- Maintains a separate log for each test procedure execution that can be viewed in the GUI
- Produces comprehensive reports in common formats at any point in the Test Event

Intelligent Test Planning

- Encodes the SCA 4.1 specification as a semantic knowledgebase (ontology) used to automatically determine relevant SCA requirements and test procedures
- Automatically develops a Test Plan considering a variety of criteria

Support for SCA 4.1 Testing Authorities

- Allows the SCA ontology to be modified independently of the tool, e.g., to update the specification, without the need to upgrade the software
- Supports ontology versioning; useful for changes to the SCA requirements due to either errors in the original specifications or future modifications

Support for SCA 4.1 Waveform Vendors

- Can be used at development time to reduce the risk of failed certification
- Can be used to determine compliance of the Domain Profile only (no device connection)

- Probes the test waveform to automatically determine the most likely conformance claim – list of application components under test and the selection of supported Units of Functionality
- Allows vendors to supply a conformance claim in an XML-based file that is automatically processed by SCA-Pass and removes any ambiguity with respect to what is the subject of the test

Rich User Experience

- Includes a browser and an XML viewer for the Domain Profile of the waveform under test
- Includes a navigable SCA 4.1 Specification Browser
- Includes a variety of perspectives (dynamically updated during execution) to facilitate comprehension of the state of an ongoing Test Event:
    - Graphical rendering of the entire Test Plan
    - Tabular view with detailed information about each executed procedure
    - Assembly-centric views
    - Component-centric views

Support for any SCA 4.1 Waveform Product

- Connects with the SCA waveform products using a TCP/IP connection
- Supports various methods for accessing the Domain Manager
- Interacts with the product using only standard-based mechanisms (no proprietary API's)

Highly Flexible Deployment and Maintenance

- Multi-platform support (Windows, Linux and macOS)
- Convenient platform-specific installers
- No dependency on other software to be present on the host machine

About VIStology

VIStology, Inc. is a software research and development corporation committed to the innovative design and development of adaptive and semantically rich information solutions. VIStology's technical expertise is in formal semantics, cognitive radio and software defined networking, information integration and fusion, situation awareness, artificial intelligence and software engineering.

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