STS

Software Communications Architecture (SCA) Tool Suite

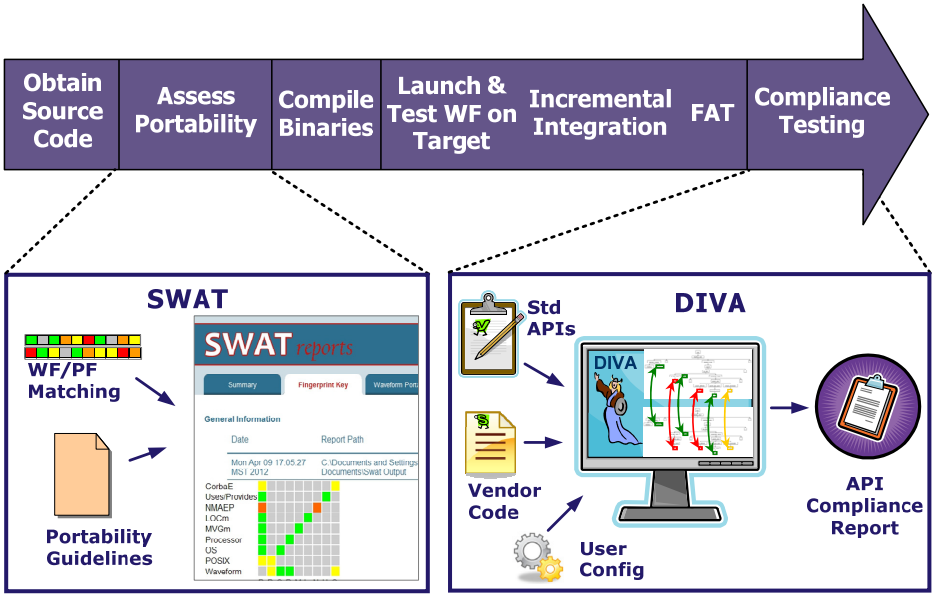
DataSoft

General Description

The SCA Tool Suite (STS) is designed to reduce turnaround time for porting an existing waveform to a new Software Defined Radio (SDR) platform. STS provides both an upfront assessment of the porting effort and a back-end automated Application Program Interface (API) verification analysis tool.

STS is a versatile suite of tools specifically designed for SDRs and the SCA domain. The suite includes the STS-WF Analysis Tool (SWAT) and the DataSoft Interface Verification Application (DIVA).

SWAT makes an empirical determination of the compatibility of a particular platform's ability to support a variety of disparate waveforms.



The SCA Tool Suite improves porting productivity while reducing cost and schedule overruns

DIVA is a fully automated, robust solution for accurate and repeatable verification of developer source code compliance to a set of Standard APIs, improving the overall API verification process by eliminating the need for manual inspection of source code.

STS uses an iterative strategy for WF porting. SWAT analyzes a waveform to evaluate sources of latency and non-compatibility while DIVA provides API compliance verification of the developed code, eliminating rework of non-compliant code after submittal.

Benefits

- Using STS through the WF porting cycle will
  - Increase engineer productivity
  - Reduce porting and integration effort
  - Validate API compliance prior to code submittal
  - Reduce time-to-deploy
  - Lower overall project cost and schedule risk
- SWAT will assess new waveform and platform compatibilities early in the development cycle for understanding of performance, effort, compliance and risk in the porting effort
- As the porting effort evolves to implemented code, DIVA will assess the code and provide valuable insight to API compliance, avoiding costly re-work when time, cost and resources are at a premium

Features

- SWAT uses industry-defined portability guidelines to produce a set of metrics and visual aids to identify areas of high risk
- DIVA is used as the porting or development effort is underway and provides a valuable insight to API compliance
- DIVA operates over a large set of API files simultaneously, allowing the user to specify implemented and non-implemented APIs and to follow dependencies of IDL files to easily understand non-compliance failures

Applications

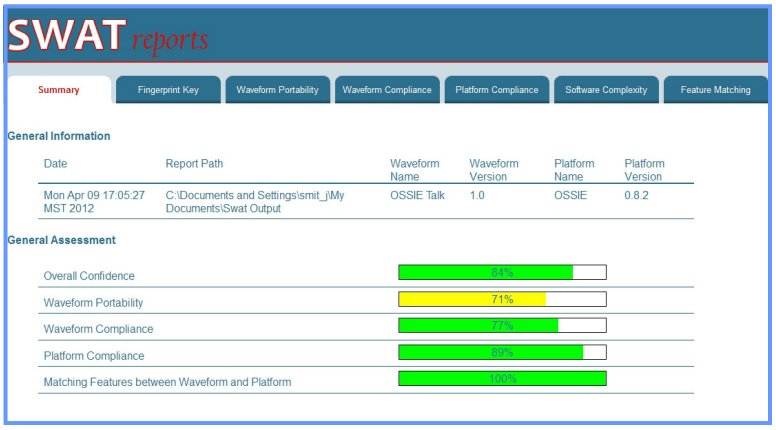
- For waveform porting, SwISS contracts, or feature upgrades, STS provides an integrated tool for early-on and continuous evaluation of performance, porting, integration, and compliance risks

STS

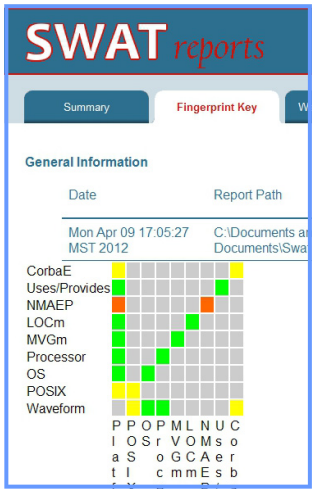
Software Communications Architecture (SCA) Tool Suite

DataSoft

SWAT Compatibility Reports



SWAT summary report detailing platform/waveform match and port complexity



SWAT fingerprint key highlighting potential problem areas

DIVA Validation Reports

API Verification Summary

The completed API Verification Checklists indicate that the product implements 16 JTRS Standard APIs.

Table 3 indicates the total number of PASS/FAIL of the implemented APIs as determined by API verification.

Table 3: API Verification Results Overview

API Status	Number of JTRS Standard APIs
PASS	16
FAIL	2
Total	**18**

Table 4 lists the JTRS Standard APIs implemented by the product.

Table 4: API Verification Results List

JTRS Standard API	IDL File Name	Filename	Content	Included IDL File(s)	API File Status	Overall Status
Audio Port Device	Audio.idl	Pass	Pass	Pass	Pass	PASS
	AudioSampleStreamExt.idl	Pass	Pass	Pass	Pass	
Device IO	DeviceIo.idl	Pass	Pass	Pass	Pass	PASS
Device IO Control	DeviceIoControl.idl	Pass	Pass	Pass	Pass	PASS
Device IO Signals	DeviceIoSignals.idl	Pass	Pass	Pass	Pass	PASS
Device Message Control	DeviceMessageControl.idl	Pass	Pass	Pass	Pass	PASS
Device Packet	DevicePacket.idl	Pass	Pass	Pass	Pass	PASS

Single IDL File Summary Report

JTRS API Set Name: JTRS
JTRS API Set Version: 1.1
JTRS Standard API: Ethernet Device
JTRS Standard API Version: 1.1.1
JTRS Standard API IDL File: C:\DIVA_Files\sets\EthernetDeviceApi\1.1.1\Ethernet.idl
Vendor IDL File: C:\DIVA_Files\vendor\good\Component-10\Ethernet.idl
Side-by-Side Comparison: C:\DIVA_Files\output\Session/JTRS1.1/good/Ethernet Side-by-Side Report.html

API Overall Status: FAILED

IDL File Overall Status: FAILED

Filename Verification: PASSED
Vendor IDL file matches JTRS Standard API IDL file.
No duplicate IDL files found.
No missing IDL files.

Content Verification: FAILED
Vendor IDL has 10 compliance issues.

#	JTRS Standard API IDL File Line Number	Vendor IDL File Line Number	Type	Description	Category	Error Type
1	6	-	#include	Expected '#include "DeviceIOControl.idl"' is missing.	DIRECTIVE	MISSING
2	7	-	#include	Expected '#include "DeviceIOSignals.idl"' is missing.	DIRECTIVE	MISSING
3	8	-	#include	Expected '#include "DevicePacket.idl"' is missing.	DIRECTIVE	MISSING
4	9	-	#include	Expected '#include "DevicePacketSignals.idl"' is missing.	DIRECTIVE	MISSING
5	10	-	#include	Expected '#include "CF.idl"' is missing.	DIRECTIVE	MISSING
6	-	8	#ifndef	Unexpected '#ifndef __DEVICEIOCONTROL_DEFINED' has been added.	DIRECTIVE	ADDED

DIVA API compliance summary (above) and a detail report showing individual IDL validation (right)

About DataSoft

DataSoft develops products for Information Technology and Wireless Communication Systems. Our products are used for intrusion protection, R&D, rapid prototyping, waveform development & porting, technology demonstration, SCA API compliance verification, test automation, and system integration. Our technology helps customers reduce development costs and improve time-to-market.

DataSoft was founded in 1995 and has operations in Scottsdale, AZ.

For additional information, visit our website at www.datasoft.com or email sales@datasoft.com.

DataSoft Corporation
1275 W. Washington St.
Suite 106
Tempe, AZ 85281
1-800-797-7153 x419
sales@datasoft.com

© 2013 DataSoft Corporation. All rights reserved