RITE ARP4754A_Prototype Tutorial

This tutorial contains simplified instructions for downloading and exploring the prototype ARP4754A Compliance Dashboard feature of RITE on a Windows PC using synthetic data supplied as an ingestion package

Copyright (c) 2024 General Electric Aerospace Research

Step 1: Setting up RACK

Details about RACK can be found at https://github.com/ge-high-assurance/RACK

In this section, we will only describe the bare minimum necessary to get RACK running.

NOTE: RACK v13 is needed for this prototype. RACK v14 may work, but has not been tested

Step 1.1:

Download and install docker from https://www.docker.com/products/dockerdesktop/

Step 1.2:

Open Windows Powershell and execute docker pull gehighassurance/rackbox:v13.0 command

Note: When the image is successfully pulled for the first time, a "Downloaded image ..." message will appear instead of the "Image is up to date ..." message shown above

Step 1.3:

Start a RACK docker instance by running the command docker run -detach -p 3030:3030 -p 8050:8050 -p 8080:80 -p 1205012091:12050-12091 gehighassurance/rack-box:v13.0

RACK should be now up and running!!!

More details about running RACK using Docker can be found at https://github.com/ge-high-assurance/RACK/wiki/02-Run-a-RACK-Box-container

Step 2: Downloading the RITE Prototype

Step 2.1:

Navigate to the Release page <u>https://github.com/ge-high-assurance/RITE/releases/tag/arp4754a_v1</u>



Step 2.2:

Download the <u>RITE_ARP4754A_032324.zip</u> file

Step 2.3:

Unzip the <u>RITE_ARP4754A_032324.zip</u> file and click on the folders until you reach the directory with the RITE executables. Then click on the RITE application button as shown below

ime	Date modified	Туре	Size
configuration	3/23/2024 1:28 PM	File folder	
features	3/23/2024 1:28 PM	File folder	
p2	3/23/2024 1:28 PM	File folder	
plugins	3/23/2024 1:30 PM	File folder	
readme	3/23/2024 1:30 PM	File folder	
.eclipseproduct	6/7/2022 11:06 AM	ECLIPSEPRODUCT	1 KB
artifacts.xml	3/23/2024 1:12 PM	XML Source File	74 KB
■ RITE.exe	3/23/2024 1:12 PM	Application	519 KB
Riffeini	3/23/2024 1:12 PM	Configuration sett	1 KB
RITEc.exe	3/23/2024 1:12 PM	Application	231 KB

Select a workspace when prompted and click on the "Launch" button

RITE should now be running as an Eclipse window!!

Step 3: Downloading the Sample Ingestion Package

We provide sample data corresponding to the OEM ontology described in the DASC 2024 paper in the form of a readymade ingestion package. From the release page shown in Step 2.3, download the OEM-Ingestion-Package-v3.zip and unzip it somewhere convenient.

Step 4: Ingesting the Data into RACK

With RACK running and RITE launched, follow the steps:

Step 4.1:

Click on "File" and then Select "Open Projects from File System"

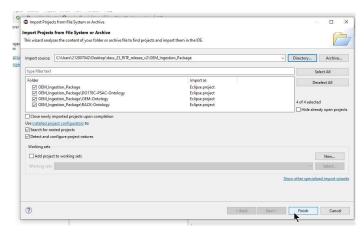
	New	Alt+Shift+N >	· ⑧ • ♡ ♡ ♡ + ♡ • ♂		Q 😰
	Open File			Console	🖹 🚺 🔂 🗮 🗖 🕶 📑
3	Open Projects from File System			Rack Console	
	Recent Files	>			
	Close Editor	Ctrl+W			
	Close All Editors	Ctrl+Shift+W			
	Save	Ctrl+S			
	Save As				
	Save All	Ctrl+Shift+S			
	Revert				
	Move				
	Rename	F2			
	Refresh	F5			
	Convert Line Delimiters To	>			
3	Print	Ctri+P			
1	Import				
-	Export				
	Properties	Alt+Enter			
	Switch Workspace	>			
	Restart				
	Exit				
		Progress 🔀	× 1 - D		
		No operations t	display at this time.		
				5	

Step 4.2:

In the pop up that appears, click on "Directory" and then select the extracted Ingestion Package directory.

nport source:			~	Directory	Archive-
ype filter text				Sele	ct All
older	Import as			Desel	ect All
				0 of 0 selected	
Close newly imported projects upon completion				Hide already	y open projec
e installed project configurators to:					
Search for nested projects Detect and configure project natures					
Vorking sets					New
Add project to working sets					
Working sets				~	Select
Working sets			Sh	ow other specialized	
Working Hetr			Sh	ow other specialized	
			Sh	ow other specialized	
		< Back	Sh Next >	ow other specialized	
Working refr	1	< Back			import wizz
		< Back			import wiz
		< Back			import wiz
		ī	Next>	Finish	d import wizz Cancel
	v 0	ī		Finish	l import wiz Cancel
	v 8	ī	Next>	Finish	import wiz
	← 진 Date modified	ī	Next>	Finish [l import wiz Cancel
op > RITE > examples > ingestion-packages	Date modified	Search	Net>	Pinish packages	d import wiz Cancel
op → RITE → examples → ingestion-packages Name OEM-Ingestion-Package	Date modified	Search	Net> ingestion- Type File fold	Finish packages ∎EE ▼ der	d import wiz Cancel
op → RITE → examples → ingestion-packages	Date modified	Search 9 PM PM	Net>	Front packages ∎≣ ▼ der der	d import wiz Cancel

Then just click on "Finish"



The ingestion package should now be visible on the "Package Explorer" pane

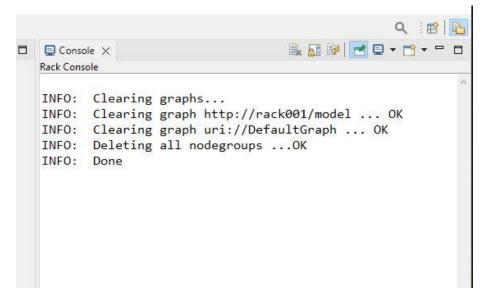
Step 4.3:

Click on the "RACK" menu from the toolbar and select "Clear RACK"

workspace-RITE - Eclipse Platform					×
File Edit Navigate Search Project	ACK Run Window Help				
	Generate All Ingestion Nodegroups	▼ ⇔ ▼ 12			Q 💼 🙀
Project Expl × P D	Regenerate manifest file Manifest Import Clear RACK			Console × Rack Console	R 🔐 🖗 🛃 🔍 × 🗅 × 🖻 - ■
	DO-178C Compliance Report ARP-4754A Compliance Report Automatic GSN Inference RACK Settings				
Ha Progr			*		
	itions to display at this time.				
No opera	adons to display at this time.			<	

In the dialogue box, select "Select All" and click "Confirm"

File Edit Navigste Search Project RACK Run Window Help 11 - 回 回 面 の の マ い	workspace-RITE - Eclipse Platform	n			- 🗆 X
Project Explorer × ■ > © OBMingetion Protecter Cancel Select All Refresh Confirm © Progress × ₩ ₩ ■ □					
>> © OBM-ingestion-Package-04 >> @ OBM-ingestion-Package-04 Cancel SelectAl DeselectAl Refresh Confirm Cancel SelectAl DeselectAl Refresh Confirm		19回日14-1ダー1日・日・ワウク・ウ・1日			Q 💼 🔂
Cancel SelectAl DeselectAl Refresh Confirm	Project Explorer × 🗖 🗖		- 6		
	E \$ 7 8	Moder/Data graphs ∑ http://rac4200/model ∑ utvi//DefundGraph ∑ Deletes all nodegroups Cancel Select All Deselect All Refresh Confirm			
INU upprations to uspay at this time.					
C 5		No operations to display at this time.			~
				C. C	>



An "Info: Done" message confirms that RACK has been cleared

Step 4.4:

Expand the ingestion package on the left, right click on the "manifest.yaml" and click on the "Manifest Import" button

workspace-RITE	- Ec	lipse Platform						_2		×
		Search Project RACK Run								
		ο i @ • i Β/ III π i 🢁 •	A • 图 • 图	*♡♡♡ ◇ * ◇ * □						
		🖻 😫 🍸 🕴 🗖 📕			- 0	Console ×	🔒 🚮 🐼	- 🗉 🕈	<u> </u>	
✓	DAP Ce SAC 4754 78C, plog	s Ontology-v2 -Ontology _Data y				Rack Console INFO: Clearing graphs INFO: Clearing graph http:/ INFO: Clearing graph uri:// INFO: Deleting all nodegrou INFO: Done	DefaultGraph			~
README		New	>							
		Open Open With Show In	F3 > Alt+Shift+W >							
	ß	Copy Paste	Ctrl+C Ctrl+V							
		Delete Move Rename	Delete F2							
		Import Export								
		Upload Nodegroup(s) Save Ingestion Package as Zip Upload as Ingestion Package								
		Manifest Import								
		Build Project Refresh	F5							
		Team Compare With Replace With	>							
		Properties	Alt+Enter		💥 🕴 🗖 🗖					
4	_	144	operations to display	y at this time.						~
						<				>
Manifest.yaml -	OEN	I-Ingestion-Package-v3				1				

"INFO: Manifest ingestion completed successfully" indicates successful ingestion

📬 🕶 🐘 💁 🚱 📲 🖩 т	��・ ※・ 別・得・やゆ や・や・ ピ		Q 1	3 4
🍐 Project Explorer 🖾 👘 🗖	- 0	🖳 Console 🛛 🔒 🛃 🚱 🛃	• 📩 •	- [
E 🕏 🍸 🕴		Rack Console		
 ► DASC_OEM_with_pssc_and_sadLv4 (m Of ► Data ► Dota ► Dota(D) TaC-PSAC-Ontology ► ACK-Ontology ► RACK-Ontology ► RACK-Ontology ♥ Arccs.yaml ♥ markstyaml ♥ rack.yaml 		<pre>INFO: Deleting nodegroup: query Requirement Review same Agent INFO: Deleting nodegroup: demoNodegroup OK INFO: Clearing all Ontologies OK INFO: Ontologies and Nodegroups are cleared from RACK INFO: Fetching all nodegroups from RACK OK INFO: Uploading nodegroup: Dbjective-A2-5-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-5-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-5-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-4-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-4-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-4-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-2-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-2-query-count-all-Deriv INFO: Uploading nodegroup: Objective-A2-1-query-count-all-SRS-F INFO: Uploading nodegroup: Objective-A2-1-query-count-all-SRS-F INFO: Uploading nodegroup: Objective-A2-1-query-count-all-SRS-F INFO: Uploading nodegroup: Objective-A2-1-query-count-all-SRS-F INFO: Uploading nodegroup: Objective-A1-1-query-count-all-SRS-F INFO: Uploading nodegroup: Objective-A1-1-query-scheck-output-fc INFO: Uploading nodegroup: Objective-A1-1-query-swcomponent-sub INFO: Uploading nodegroup: Objective-A5-5-query-swcomponent-sub INFO: Uploading nodegroup: Objective-A5-5-query-swcomponent-sub INFO: Uploading nodegroup: PSAC-query-source-document.json INFO: Uploading http://arcos.rack/OEMMFSDD_Req OK INFO: Uploading http://arcos.rack/OEMMFSDD_Req OK INFO: Uploading http://arcos.rack/OEMMFSDT_Result OK INFO: Uploading http://arcos.rack</pre>	ed-Sub ed-Sub -Reqs- ed-SRS ed-SRS eqs-th eqs.js Reqs.j Reqs.j r-PSAC n logs.j DD-tra	DD- tha jsc -Re at- ison ison -SE OK

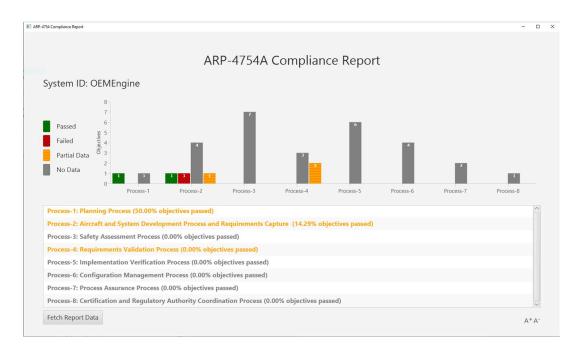
Step 5: Running the Compliance Dashboard _{Step 5.1:}

From the "RACK" menu, click on the "ARP-4754A Compliance Report" button

- 🗑 🖨 O 🖉 - 🖻 🗍	Generate All Ingestion Nodegroups	∀ ⇔ + ⊡			Q
Project Explorer X Project Expl	Regenerate manifest file Manifest Import Clear RACK		- 0	Console × Rack Console	
	DD-178C Compliance Report ARP-4754A Compliance Report				http://rack001/model OK
> > D0178C-PSAC-Ontology > > OEM_ARP4754_Data > > OEM_D0178C_Data	AKP-4/34A Compliance Report Automatic GSN Inference RACK Settings				uri://DefaultGraph OK odegroupsOK
Y manifetyani @ README.bt					
	₩ Progress × No operations to display at this time.		× • • •		

When the dashboard pops up, press the "Fetch Report Data" button, and wait

ARP-4754 Compliance Report		-	
	ARP-4754A Compliance Report		
System ID:			
System iD.			
-1			
Passed			
Failed			
Partial Data			
No Data 0			
Fetching RACK data. Please be pat	ient		
Fetch Report Data		A ⁺	A-



After the data is fetched the dashboard will be ready for you to explore !!

NOTE:

- 1. This dashboard is only a prototype, and many aspects are still incomplete. So, several buttons and menu items may not work.
- 2. There may be bugs that we have not accounted for.