

Raytheon

Customer Success Is Our Mission



Air
Land
Sea
Space
Cyberspace

Innovation. In all domains.

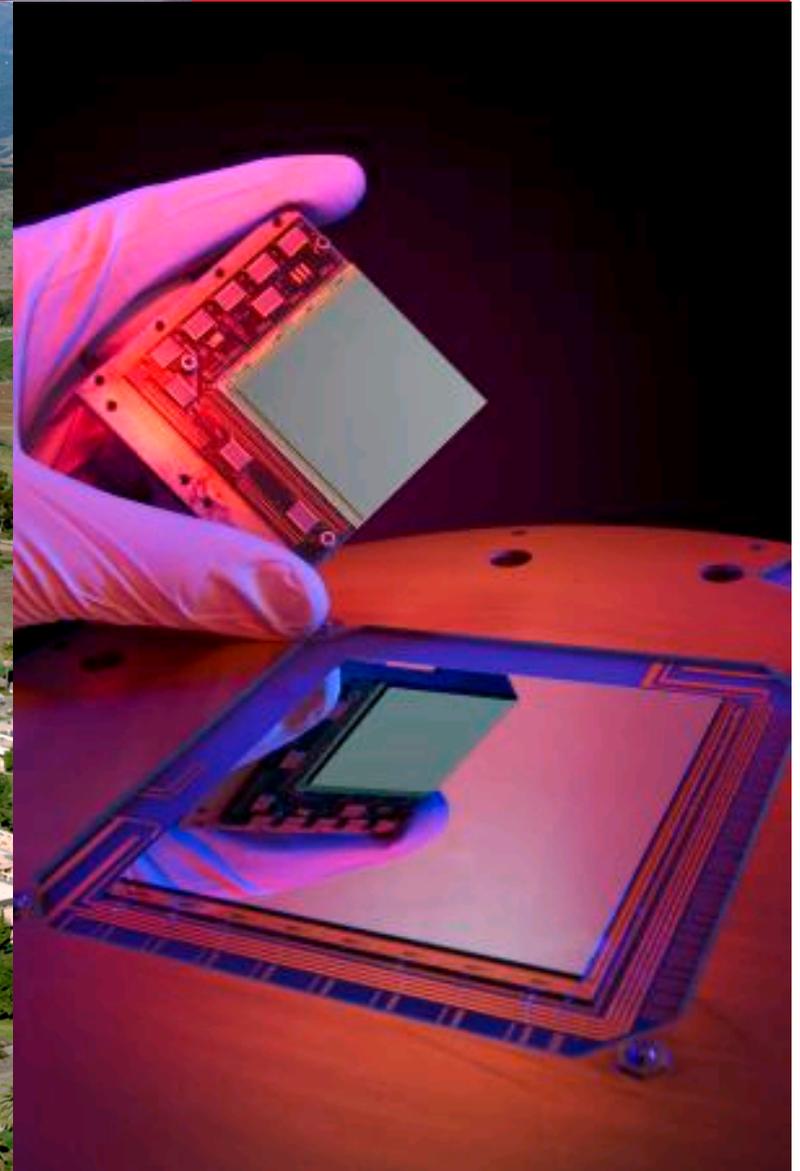
Capitalizing on NASA Supplier Assessments

Glenn Jackson

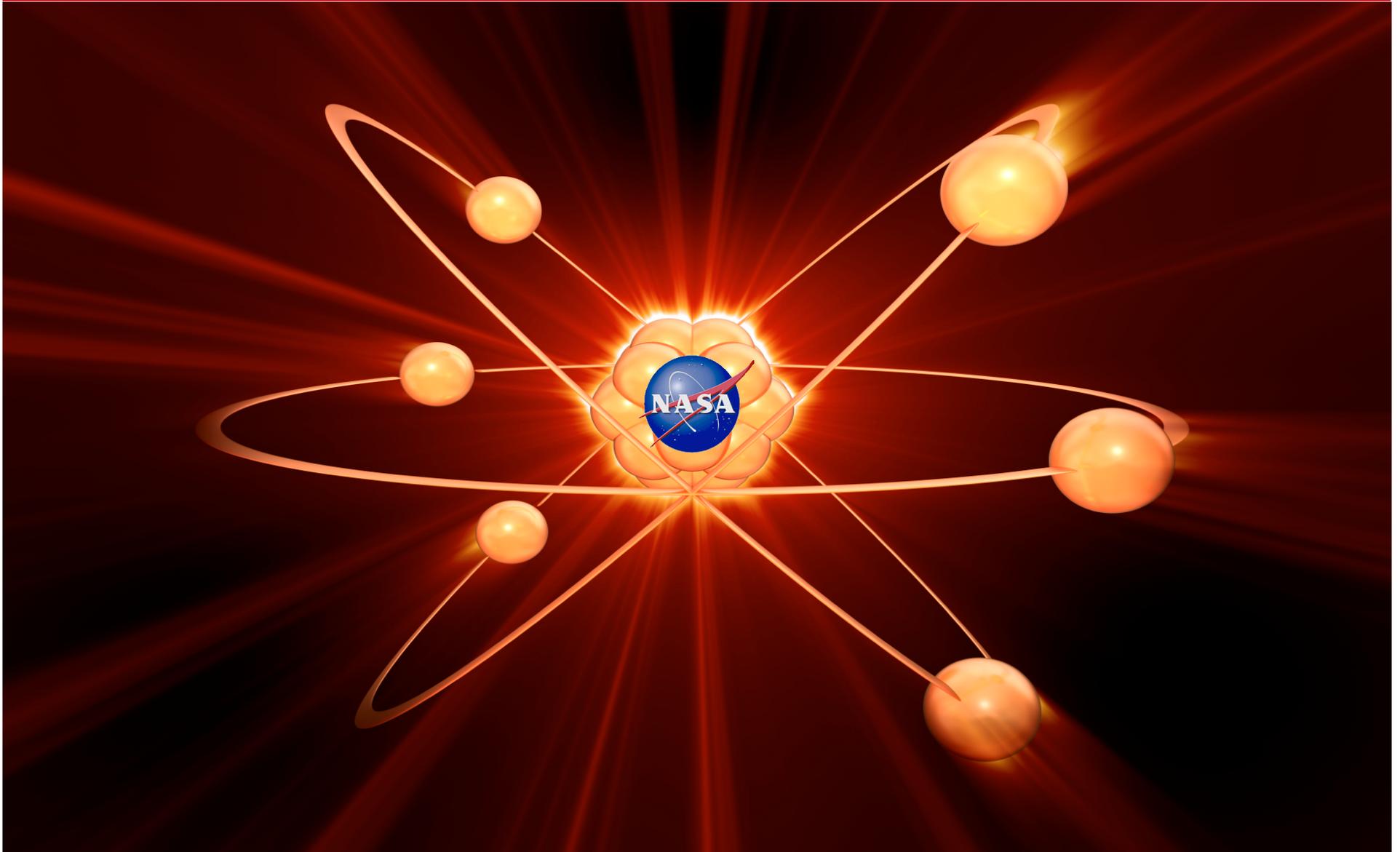
*Senior Manager for Quality,
Reliability and Mission Assurance,
Raytheon Vision Systems*

October 15, 2009

Raytheon Vision Systems : What We Do



NASA Related Programs



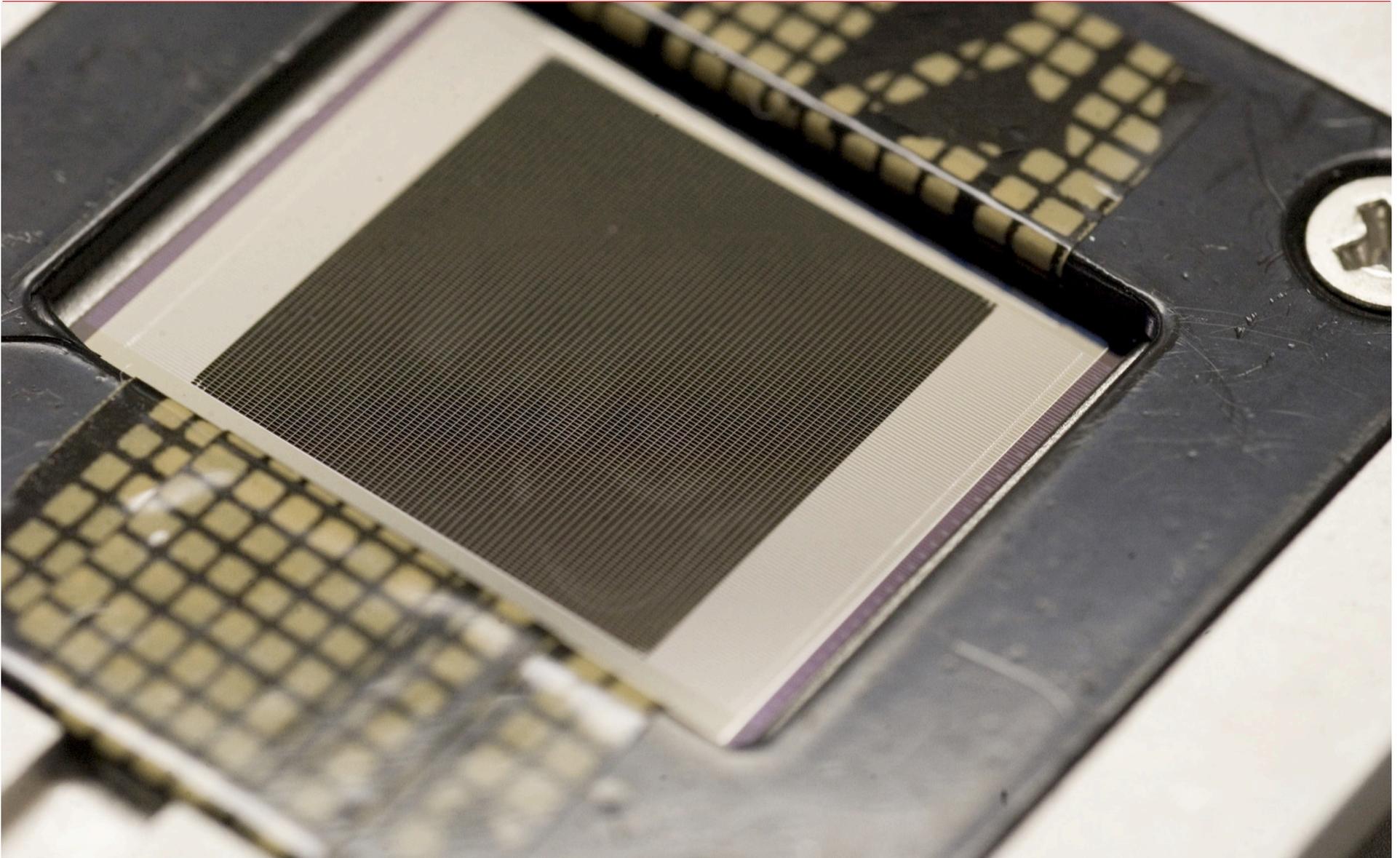
NASA Related Programs **LANDSAT**



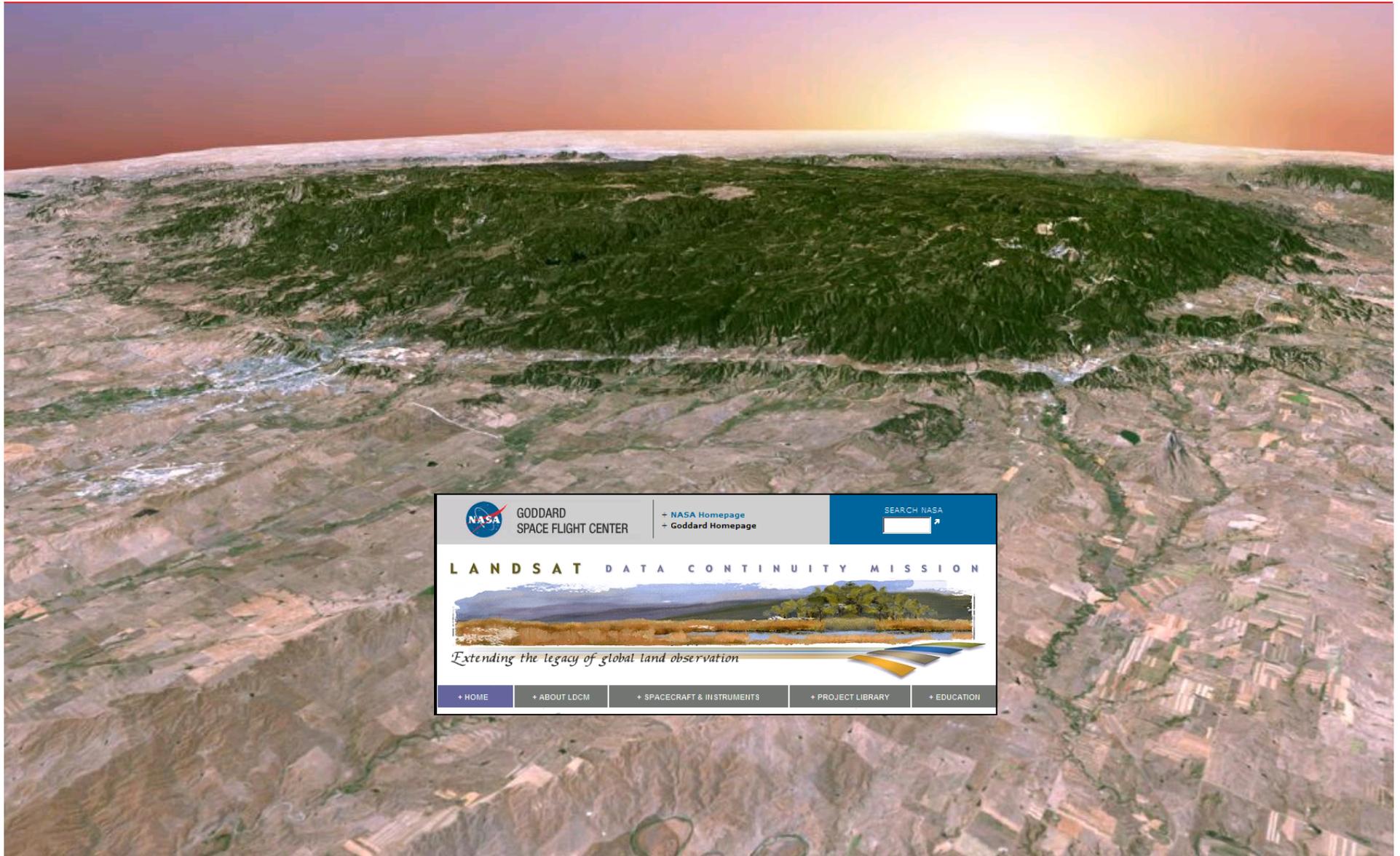
NASA Related Programs

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MIRI (Mid Infrared Instrument)



LDCM (LANDSAT Data Continuity Mission)



2008 NASA Audit Assessment

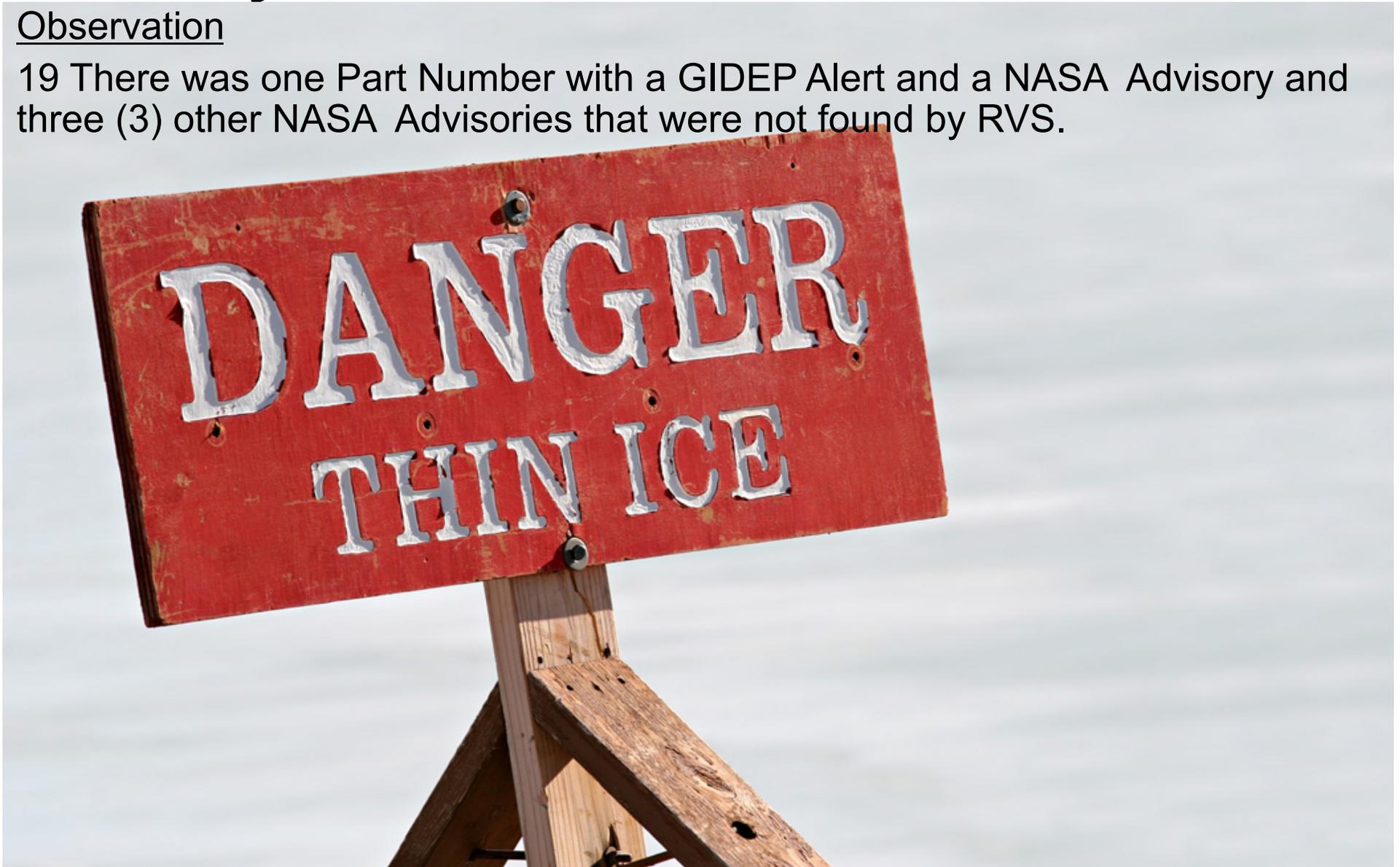
Category	NC	O
Document & Record Control	5	1
Configuration Management		1
Training	1	
First Article	1	
Industrial Safety		2
Electrostatic Discharge	1	1
Calibration	1	
Quality		1
Purchasing	1	1
GIDEP		1
TOTAL	10	8

Findings

Alert System: GIDEP

Observation

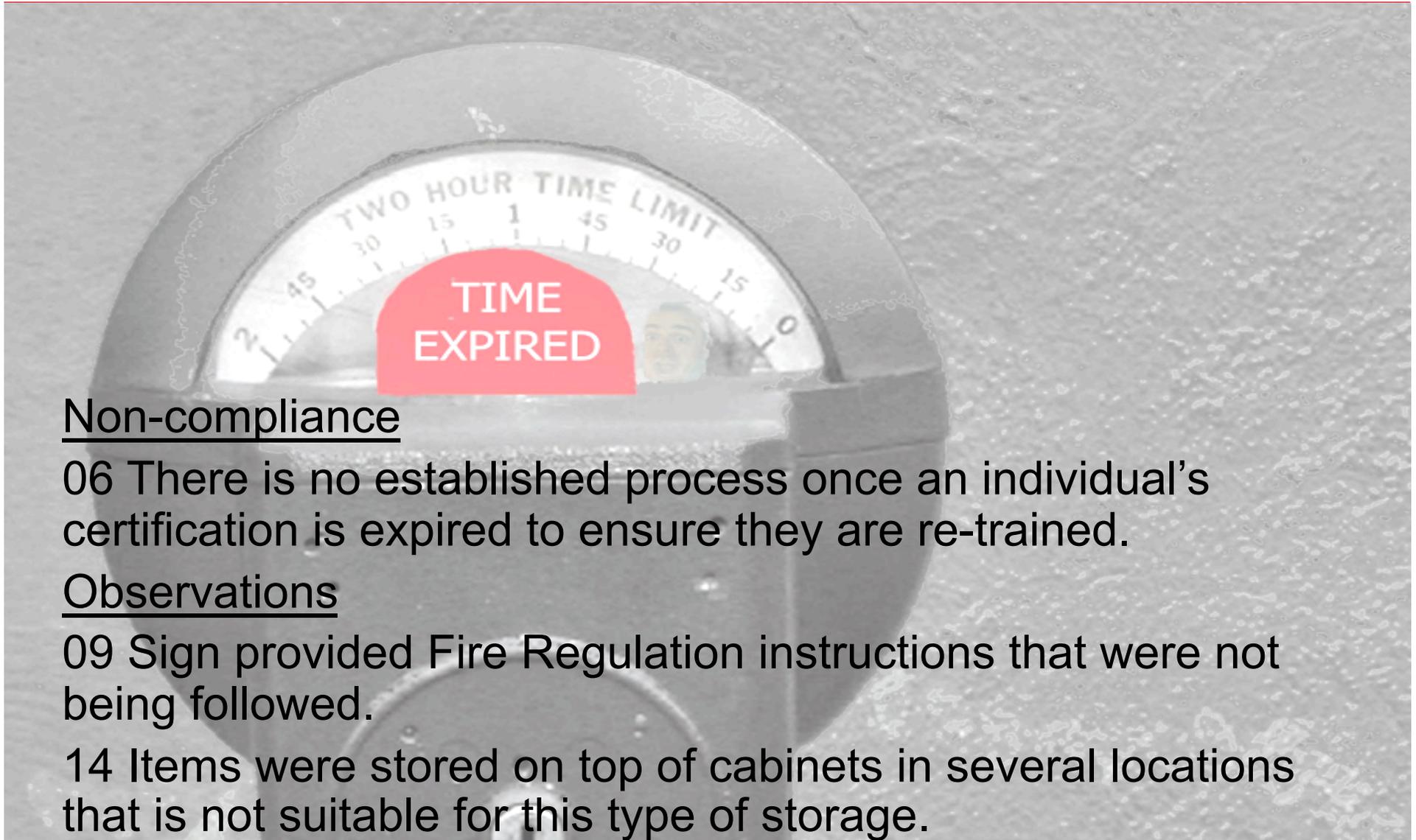
19 There was one Part Number with a GIDEP Alert and a NASA Advisory and three (3) other NASA Advisories that were not found by RVS.



Findings **Impact**

- Focused attention on RVS's alert system
- Is this a mission assurance item?
- Are all alerts being properly addressed?
- Initiated a project to research all alerts.

Expired Training Certifications & Industrial Safety



Non-compliance

06 There is no established process once an individual's certification is expired to ensure they are re-trained.

Observations

09 Sign provided Fire Regulation instructions that were not being followed.

14 Items were stored on top of cabinets in several locations that is not suitable for this type of storage.

Findings **Impact**

- Used to expedite a current project
- Linked factory access to training requirements
- Initiated a cross-functional project

Electrostatic Discharge

Non-compliance

- 12 There is no objective evidence that the Common Point Facility grounds are checked to ensure that there is a viable ground for Manufacturing to connect to.

Observation

- 11 The RVS ESD Control Plan was submitted to Corporate for approval that has not been approved by corporate. It is unclear if the RVS ESD control Plan fulfills Corporate Directive.

Findings **Impact**

- Used to expedite a current Raytheon Corporate initiative project.
- Initiated a focused reliability study on currently manufactured and fielded product.

Positive Observation (2008)

The “Quality and Mission Assurance Program Life Cycle Support Processes” (aka Quality Engineering Workbook) developed by RVS and deployed online earlier in 2008, serves as an outstanding, integrated tool and resource for the planning and implementation of quality and mission assurance activities. In recognition of its value-added features, RVS indicated that its deployment to other Raytheon sites is underway.

Positive Observation (2009)

- Significant work completed this far especially in the areas of GIDEP and Training.
- The team noticed that due diligence was conducted in responding to all findings, including Observations.

Leveraging The Audit **Factory Access Project**

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Factory Access Project

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Eliminated & Limited Access for Non-Essentials



Factory Access Project



Training is current and easily monitored.

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Raytheon Home | RVS Home | Directory | Search | Newsroom | Collaboration | Help

Home | Forms | Records | PEP | Calendar | RMSP

RTN Search
Go!

Search this site
Search

Local Resources

- RVS Employee Training Records
- RVS Training Support System
- Controlled Course List
- EHS Safety Training
- ESD Awareness / SP80207 Training
- RVS New Hire Website
- RVS Training Materials
- EW Homepage
- RVS Homepage
- Contact

Goleta Corridor Training & Development

RVS Employee Training Records

Attention | Training Records

- RVS Training Records and Information
- Certification Records
- RLI/RLA Records
- Raytheon Education Assistance Program

News and Announcements

News and Announcements

2009 Ethics Education : On-line Compliance Module (Complete by October 31, 2009):

- Understanding the Foreign Corrupt Practices Act
- Gifts and Gratuities

Note: Ethics Checkpoint 2009, Instructor Led (Complete by August 30, 2009)

Personal Education Program Announcement

Workplace Harassment Training 2009 - Mandatory Supervisors/Managers Only.

Training Home
Records
MSP
System
Library

Upcoming Events

There are no upcoming events.

calendar...

Username:
Password:
Login

NCS Quality Assessor Training
TAB Bond or Shear Test Operator - SP80348
Validator Training - Factory Process Validations
Wirebond Operator Type 1 Style BC, BR

Factory Access

Factory Access Process Information
Environmentally Controlled Areas SP80220 - 00-0324
Environmentally Controlled Areas SR80435 - 08-0022
ESD Awareness - SP80207 - 96-0315
BASIC ESD, FOD, ECA for non-product handlers - 08-0036
RVS FOD Awareness Level 2 - 06-0012
RVS FOD Awareness Level 2 and 3 - 06-0013

Factory Specific Protocols

- B01 FPA Mfg - 08-0008
- B02 ADV/Uncooled - 08-0012
- B03 Strategic - 08-0014
- B03 Strategic Red ECA's 08-0046
- B03/D57 Interconnect - 08-0015
- B08 Dewar Mfg - 08-0018
- Test - Engineering Non-Product Handler Version - 08-0045
- Test - Engineering Product Handler Version - 08-0007

10/19/09

Leveraging The Audit Factory Process Validations



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RVS Home | Raytheon Home | Directors | Search | Newsroom | Collaboration | Help | Today: Tuesday, September 8, 2009

Home Menu Reports Quality BMSF Login

Factory Process Validation

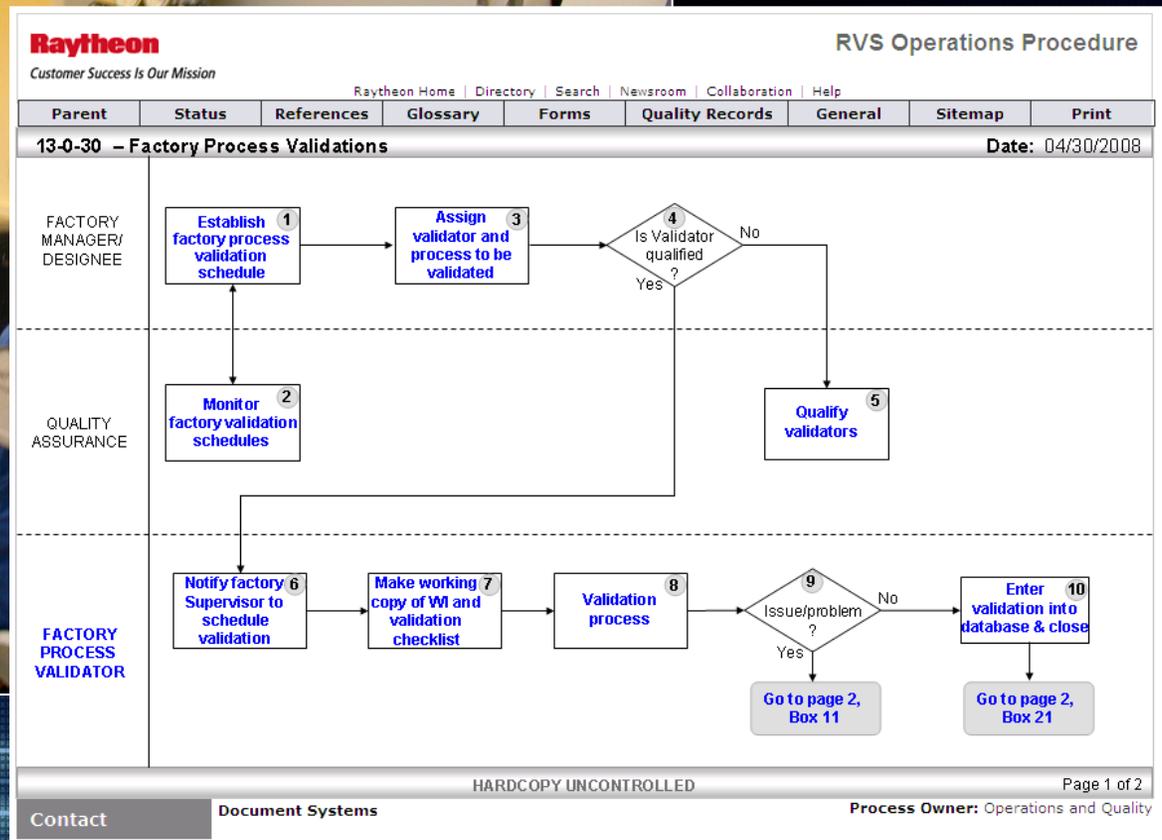
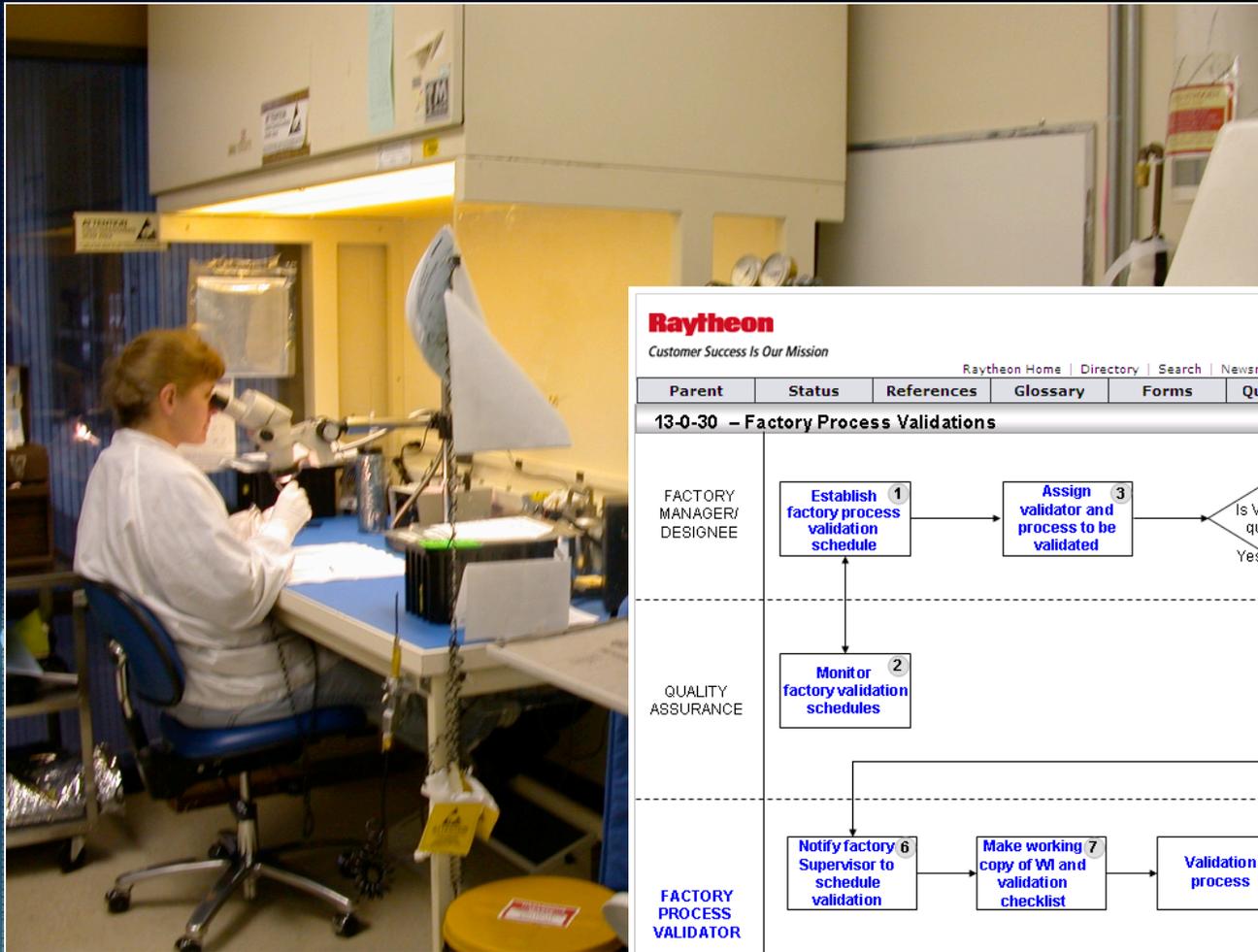
Search (Click on - to collapse, + to expand)

Records 1 to 20 of 382

Validation ID	Validator	Process	Date of Validation	Document Number	Factory	Status	Target Date	Date Closed	V
397		Bond Thermal Support	9/2/2009	WI13244	B8 - Dewar Mfg	Closed	9/4/2009	9/4/2009	
396		CAMERA CORE ASSEMBLY, PHANTOM 640	8/19/2009	WI14305	B8 - Dewar Mfg	Closed	8/19/2009	8/19/2009	
395		Receiving Inspection	9/4/2009	403088-1	B23 - Receiving Inspection (RIT)	Closed	9/4/2009	9/4/2009	
394		Install ATRCM Cable	9/3/2009	WI14308	B8 - Dewar Mfg	In Process	9/11/2009		
393		Group B FAT, Javelin Seeker Focal Plane Assembly	9/2/2009	QTP-44-800-80	B8 - Dewar Mfg	Closed	8/31/2009	9/2/2009	
392		LPE Cap Growth	8/31/2009	Base 0142	B2 - IR Materials (LPE)	Closed	8/31/2009	8/31/2009	
391		Nakagawa etch of wafer	8/31/2009	WI 11836	B3 - IR Materials (CoZnTe Substrates)	Closed	8/31/2009	8/31/2009	
390		6" SVG Track - Develop	8/26/2009	WI14284	B2 - Uncooled FPA Fab	Closed		8/27/2009	
389		Canon i3 FPA System - Photolithography	8/26/2009	WI13998	B2 - Uncooled FPA Fab	Closed		8/27/2009	
388		6" HMDS Wafer Prime	8/26/2009	WI14086	B2 - Uncooled FPA Fab	Closed		8/27/2009	
387		6" SVG Track - Resist Coat	8/26/2009	WI14190	B2 - Uncooled FPA Fab	In Process	8/31/2009		
386		Hot Acid Strip Process	8/26/2009	BASE6006	L01 - SPin	In Process	9/28/2009		
385		Kit wafer	8/26/2009	BASE6058	L01 - SPin	Closed		8/26/2009	
384			8/17/2009		B3 - Strategic (Interconnect)	In			

Factory Process Validation

Greater monitoring of factory processes



Factory Process Validation

Raytheon

Re-established customer/supplier relationship



Factory Process Validation

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Metrics built into the process (monthly reporting)

The image displays three overlapping screenshots of the Raytheon RVS Home dashboard, illustrating the metrics built into the process for monthly reporting. The dashboard features a navigation menu with 'Home', 'Menu', and 'Reports' tabs. The background is a dark blue grid with glowing blue lines and circles, suggesting a network or process flow.

Top Screenshot: Closed Validations

- Header: **Raytheon** Customer Success Is Our Mission
- Navigation: RVS Home | Raytheon, Home, Menu, Reports
- Section: Closed Validations
- Search: Search, Refresh
- Filters: Exact phrase, All words, Any word

Middle Screenshot: Validations In Process

- Header: **Raytheon** Customer Success Is Our Mission
- Navigation: RVS Home | Raytheon, Home, Menu, Reports
- Section: Validations In Process
- Search: Search, Refresh
- Filters: Exact phrase, All words, Any word

Bottom Screenshot: Validations Exceeding Target Date

- Header: **Raytheon** Customer Success Is Our Mission
- Navigation: RVS Home | Raytheon, Home, Menu, Reports
- Section: Validations Exceeding Target Date
- Search: Search, Refresh
- Filters: Exact phrase, All words, Any word

Factory Process Validation

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Quality Control maintained by factories



Quality Assurance is maintained by QA Organization

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Vision Systems

Raytheon Home | RVS Home | Directory | Search | Newsroom | Collaboration | Help

Home	RMS	Corporate	Contacts	Doc Systems	Feedback
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RTN Search
Go!

Main Menu

- AWW Schedule
- Conference Rooms Listing
- Organizational Links
- RVS QA Microblog
- Phone List
- PTO
- Quality OrgChart

Doc Links

- MRAR

RVS QUALITY & MISSION ASSURANCE

Welcome to RVS Quality Assurance

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Quality

Quality Excellence

Customer Satisfaction

Continual Improvement

Using Teamwork & Raytheon Six Sigma

Leveraging The Audit

Quality Engineering Workbook (QEW)

The screenshot displays the Quality Engineering Workbook (QEW) in Microsoft Excel. The main title is "Quality Engineering Workbook" with a revision of 2.0. The workbook is organized into several sections:

- Program Information:** Fields for Program Name, Cost Account No., and Completion Date.
- Directive Sheets:** A table with columns for "Go To Sheet" and "Make Visible" for various program phases like Pre-Program Planning, Program Startup, Program Execution, and Program Closure.
- Tool/Enabler Sheets:** A table with columns for "Go To Sheet" and "Make Visible" for tools like Acronyms, Action Item Log, Event Log, Lessons Learned, etc.
- Independent Review Checklist Sheets:** A table with columns for "Go To Sheet" and "Make Visible" for gates 5 through 10 and 5&8&10.
- Compliance Mapping:** A table with columns for "Go To Sheet" and "Make Visible" for AS9100, CMMI, and Q-Notes Matrix.
- Task Table:** A detailed table with columns: Act. No., Role, C, T, S, N, R, O, Activity, Task, User Notes (Optional), and Activity Derived From. It lists tasks such as "Select the Quality Category from the check boxes above" and "Disposition all nonconforming parts / materials".
- Key:** A legend explaining cell shading (Blue, White, Gray, Black) and link colors (Green, Blue, Magenta).

Key:

- Blue-shaded cells represent required activities for a particular Quality Category.
- White-shaded cells represent activities that are to be evaluated for applicability.
- Gray-shaded cells represent activities not applicable to the designated Quality Category and require project justification in the Notes field.
- Black-shaded cells represent activities that are not applicable for the designated Quality Category.

Link Legend:

- Green link indicates Quality Directive / Process
- Blue link indicates Directive / Process for other functions
- Magenta link indicates NCS Quality Directive / Process

Quality Engineering Workbook (QEW)

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QE Tasks are identified : Less Variability.



Quality Engineering Workbook (QEW) **Facilitated Activity Based Costing (ABC)**

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Special Test Equipment Workbook (STEW)

STEW_Wkbk_template.xls [Compatibility Mode] - Microsoft Excel

Enter Program Name Here			Enter Program GLA or Network Number Here			Special Test Equipment Workbook STEW Revision R		
Go To Reveal Sheet Sheet	Directive Sheets	Go To Reveal Sheet Sheet	Tool/Enabler Sheets	Go To Reveal Sheet Sheet	Independent Review Checklist Sheets			
→	<input type="checkbox"/>	→	Cost Estimate	→	Gate 5			
→	<input type="checkbox"/>	→	Definition of STE	→	Gate 6			
→	<input type="checkbox"/>	→	Event&Action Log	→	Gate 7			
→	<input type="checkbox"/>	→	Glossary	→	Gate 8			
→	<input type="checkbox"/>	→	Lessons Learned	→	Gate 9			
→	<input type="checkbox"/>	→	Project Index	→	Gate 10			
→	<input type="checkbox"/>	→	ReqTrace	→	Gate 5&9&10			
→	<input type="checkbox"/>	→	Roles&Responsibilities					
→	<input type="checkbox"/>	→	Schedule					
→	<input type="checkbox"/>	→	STE Devel Plan					
→	<input type="checkbox"/>	→	SW Design					
→	<input type="checkbox"/>	→	System Diagram					
→	<input type="checkbox"/>	→	Test Summary					
→	<input type="checkbox"/>	→	STEW Review Checklist					
→	<input type="checkbox"/>	→	AS 9100 Traceability					
→	<input type="checkbox"/>	→	CMMI Traceability					

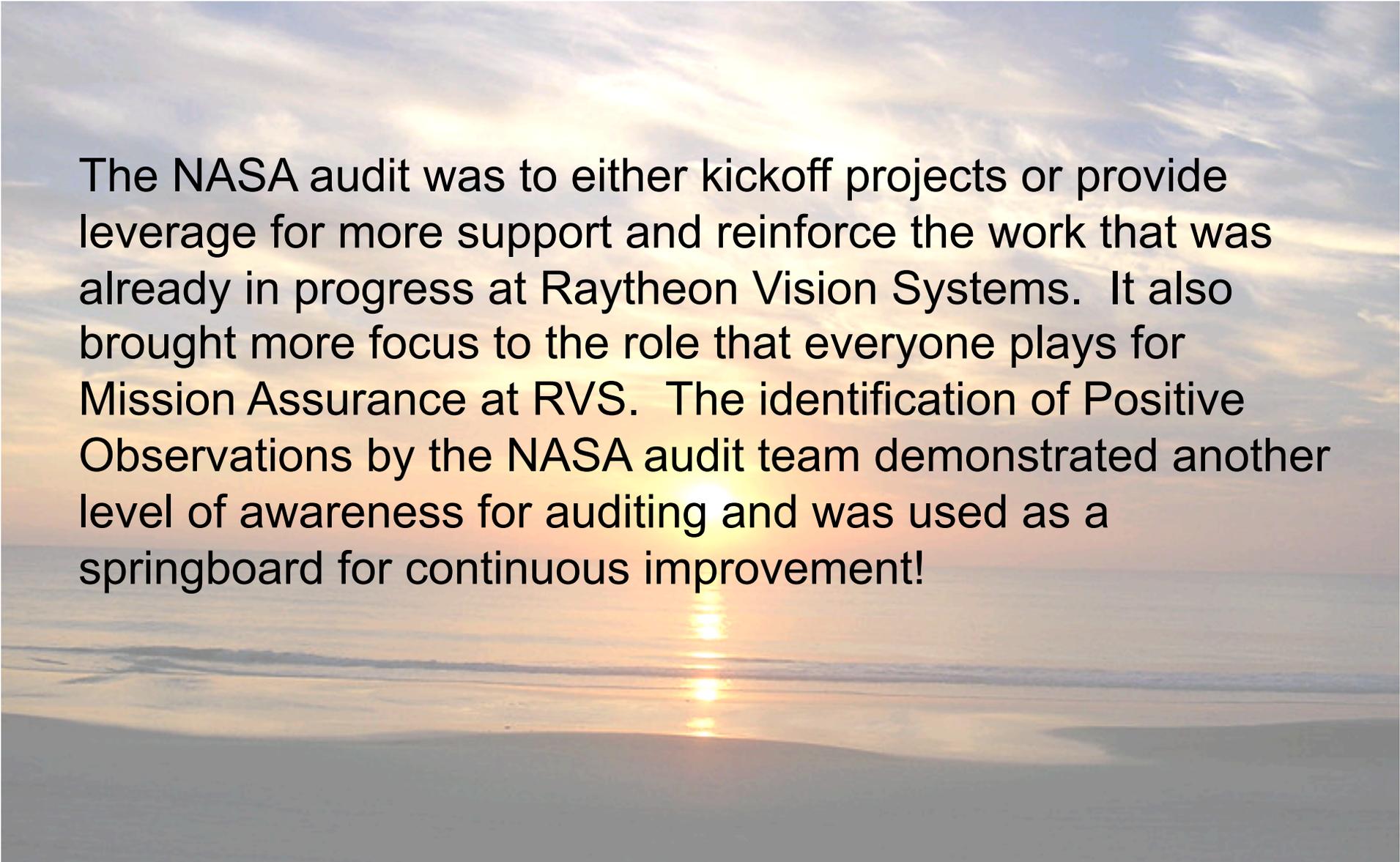
Comments:

AS9100 Para.	Title	Addressed by EP 5.4.02 Activity
4	QUALITY MANAGEMENT SYSTEM	Blank
4.1	General Requirements	
4.2	Documentation Requirements	Blank
4.2.1	General	
4.2.2	Quality Manual	
4.2.3	Control of Documents	2.2.6.4, 2.2.7.1, 2.2.7.2, 2.2.7.3, 2.2.7.4, 2.2.7.6, 2.2.7.7, 2.2.7.9, 2.2.7.12, 3.3.7.6, 3.3.7.7, 3.3.7.8, 3.3.7.9, 3.3.7.11, 5.3.4.1, 5.3.4.2
4.2.4	Control of Records	2.2.2.9, 2.2.2.10, 2.2.2.11, 2.2.2.13, 2.2.3.8, 2.2.3.9, 2.2.3.10, 2.2.3.11, 2.2.3.12, 2.2.3.13, 2.2.6.11, 2.2.6.12, 2.2.6.14, 2.2.7.5, 2.2.7.12, 3.3.7.1, 3.3.7.5, 3.3.7.11, 4.3.5, 4.3.6, 5.3.4.3
4.3	Configuration Management	
5	MANAGEMENT RESPONSIBILITY	Blank
5.1	Management Commitment	1.3.16, 2.2.7.26, 3.3.1.6, 3.3.7.16
5.2	Customer Focus	
5.3	Quality Policy	
5.4	Planning	Blank
5.4.1	Quality Objectives	
5.4.2	Quality Management System Planning	
5.5	Responsibility, Authority and Communication	Blank
5.5.1	Responsibility and Authority	
5.5.2	Management Representative	
5.5.3	Internal Communication	
5.6	Management Review	Blank
5.6.1	General	
5.6.2	Review Input	
5.6.3	Review Output	
6	RESOURCE MANAGEMENT	Blank
6.1	Provision of Resources	
6.2	Human Resources	Blank
6.2.1	General	
6.2.2	Competence, Awareness and Training	
6.3	Infrastructure	
6.4	Work Environment	
7	PRODUCT REALIZATION	Blank
7.1	Planning of Product Realization	1.3.1, 1.3.5, 1.3.6, 1.3.7, 1.3.8, 1.3.10, 1.3.11, 1.3.13, 1.3.14, 1.3.18, 1.3.19, 1.3.22, 2.2.1.1, 2.2.1.2, 2.2.1.3, 2.2.1.4, 2.2.1.5, 2.2.1.6, 2.2.1.7, 2.2.1.9, 2.2.2.1, 2.2.2.2, 2.2.2.3, 2.2.2.4, 2.2.2.5, 2.2.2.6, 2.2.6.10, 2.2.6.11, 2.2.7.8, 3.3.1.1, 3.3.1.2, 3.3.1.6, 3.3.2.1, 3.3.2.2, 3.3.2.3, 3.3.6, 3.3.7.8, 4.3.1, 4.3.3
7.2	Customer-Related Processes	Blank
7.2.1	Determination of Requirements Related to the Product	2.2.2.1, 2.2.2.2, 2.2.2.3, 2.2.2.4, 2.2.2.5, 2.2.2.6, 3.3.2, 3.3.2.3, 4.3.1, 4.3.3, 5.3.1.2
7.2.2	Review of Requirements Related to the Product	1.3.3, 1.3.4, 1.3.15, 1.3.20, 2.2.2.9, 2.2.2.10, 2.2.2.12, 3.3.1.5
7.2.3	Customer Communication	2.2.2.11, 2.2.2.13
7.3	Design and Development	Blank
7.3.1	Design and Development Planning	1.3.12, 2.2.1.7, 2.2.1.8, 2.2.4.5, 2.2.6.1, 5.3.1.2, Inputs, Outputs
7.3.2	Design and Development Inputs	5.3.1.2
7.3.3	Design and Development Outputs	2.2.3.2, 2.2.3.6, 2.2.3.7, 2.2.5.3, 3.3.3.1, 4.3.4, 5.3.1.3
7.3.4	Design and Development Review	2.2.3.8, 2.2.3.9, 2.2.3.10, 2.2.3.11, 2.2.3.12, 2.2.3.13

Special Test Equipment Workbook (STEW) **Raytheon** **Software Testing is Predictable; Less Variability**



Summary

The background of the slide is a photograph of a sunset over a body of water. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water's surface. The sky is filled with soft, wispy clouds, and the overall atmosphere is calm and serene.

The NASA audit was to either kickoff projects or provide leverage for more support and reinforce the work that was already in progress at Raytheon Vision Systems. It also brought more focus to the role that everyone plays for Mission Assurance at RVS. The identification of Positive Observations by the NASA audit team demonstrated another level of awareness for auditing and was used as a springboard for continuous improvement!