

OMG's Third Annual
Software-Based Communications (SBC) Workshop:
Realizing The Vision



Inter-Consortia Affiliation

SDR Standards

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The Golden Spike



Because of the nature of the way money was given to the companies building the railroad, they were sometimes known to sabotage each other's railroads, to claim that land as their own. As well, when they first came close to meeting, they changed paths to be nearly parallel, so that each company could claim subsidies from the government over the same plot of land. Fed up with the fighting, Congress eventually declared where and when the railways should meet.





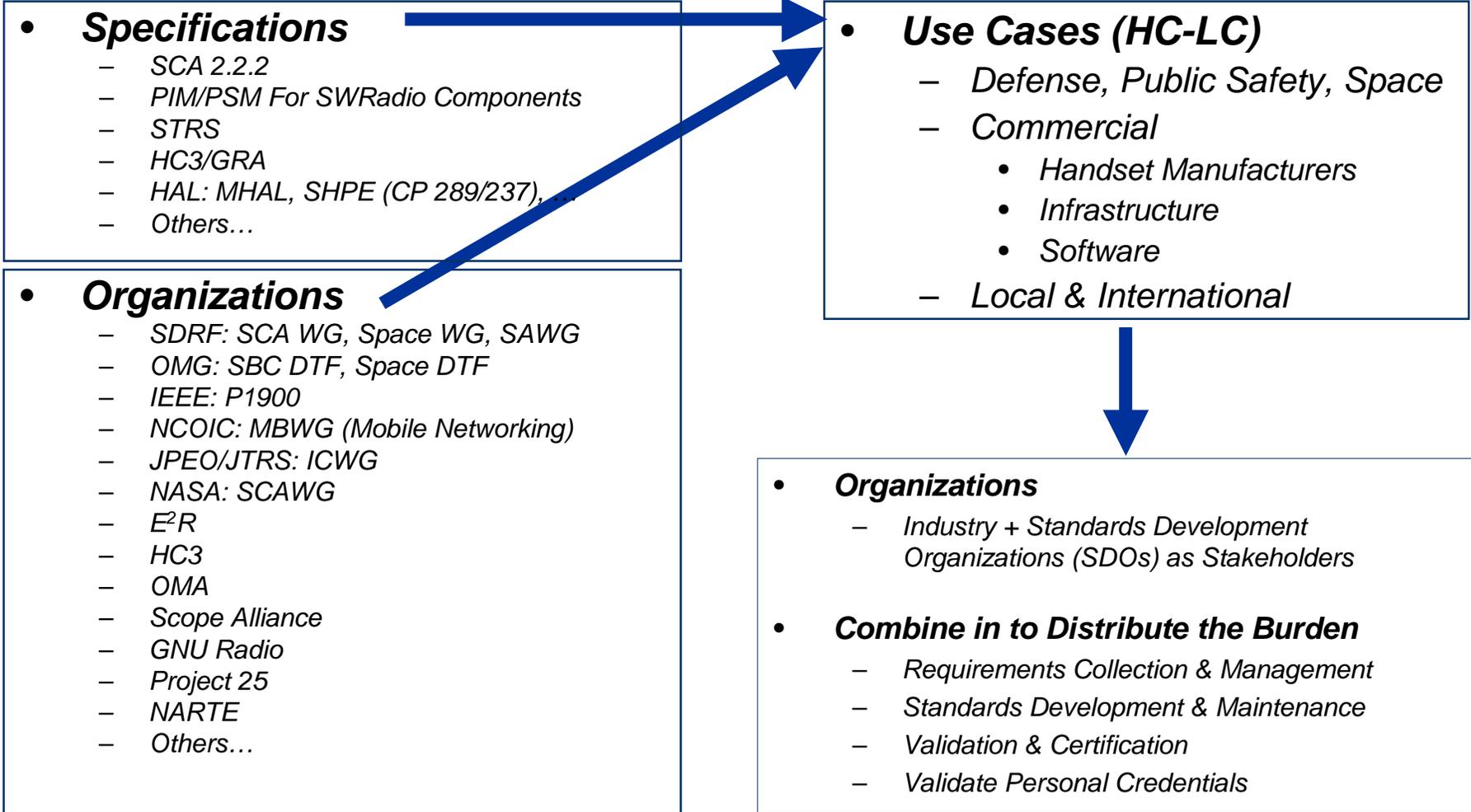
Vision & Challenge

- ***SDR Vision***
 - *Interoperability, Reusability, Portability*
 - *Reuse of Flexible Standards Across Customer Base*
- ***The Challenges Facing Common Standards***
 - *Unaware of Other Standards & Initiatives*
 - *Use Case Differences (Scale, Deployment, etc.)*
 - *Heavy-weightiness (Reality vs. Perceived)*
 - *Similar Standards Evolving Differently*
 - *Scoping, Cost & Profitability*





SDR & Cognitive Radio Standards



Specifications

- SCA 2.2.2
- PIM/PSM For SWRadio Components
- STRS
- HC3/GRA
- HAL: MHAL, SHPE (CP 289/237), ...
- Others...

Organizations

- SDRF: SCA WG, Space WG, SAWG
- OMG: SBC DTF, Space DTF
- IEEE: P1900
- NCOIC: MBWG (Mobile Networking)
- JPEO/JTRS: ICWG
- NASA: SCAWG
- E²R
- HC3
- OMA
- Scope Alliance
- GNU Radio
- Project 25
- NARTE
- Others...

Use Cases (HC-LC)

- Defense, Public Safety, Space
- Commercial
 - Handset Manufacturers
 - Infrastructure
 - Software
- Local & International

Organizations

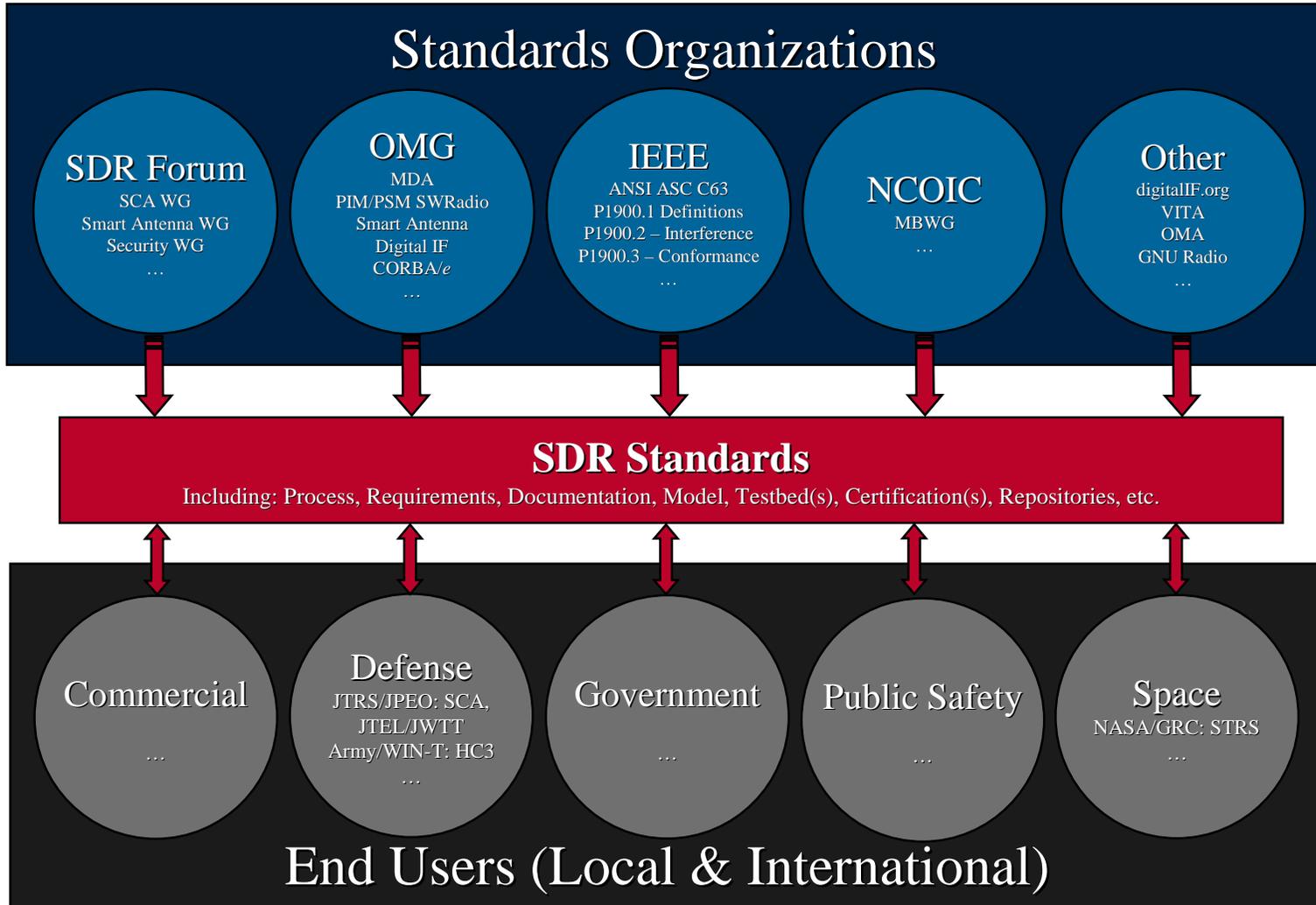
- Industry + Standards Development Organizations (SDOs) as Stakeholders

Combine in to Distribute the Burden

- Requirements Collection & Management
- Standards Development & Maintenance
- Validation & Certification
- Validate Personal Credentials

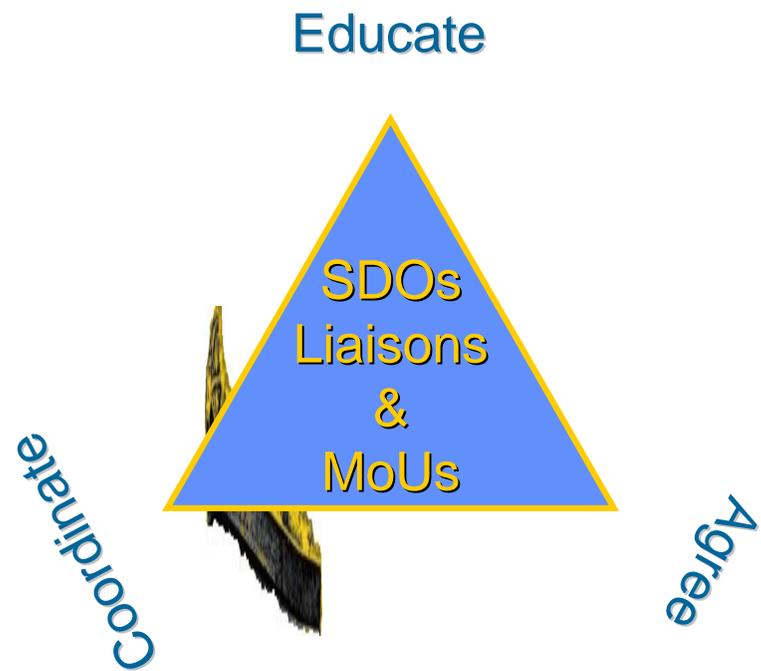


SDR Standards & The Golden Spike





SDR Standards & The Golden Spike





Business Model Challenges

- **Financial Models**

- *Government Funded*
- *Membership Fees / Sponsoring*
- *Work Product Sales*
- *Conference & Event Fees*

- **Intellectual Property**

- *Document Handling Conflict*
- *Reasonable & Non-Discriminatory (RAND) Bylaws*

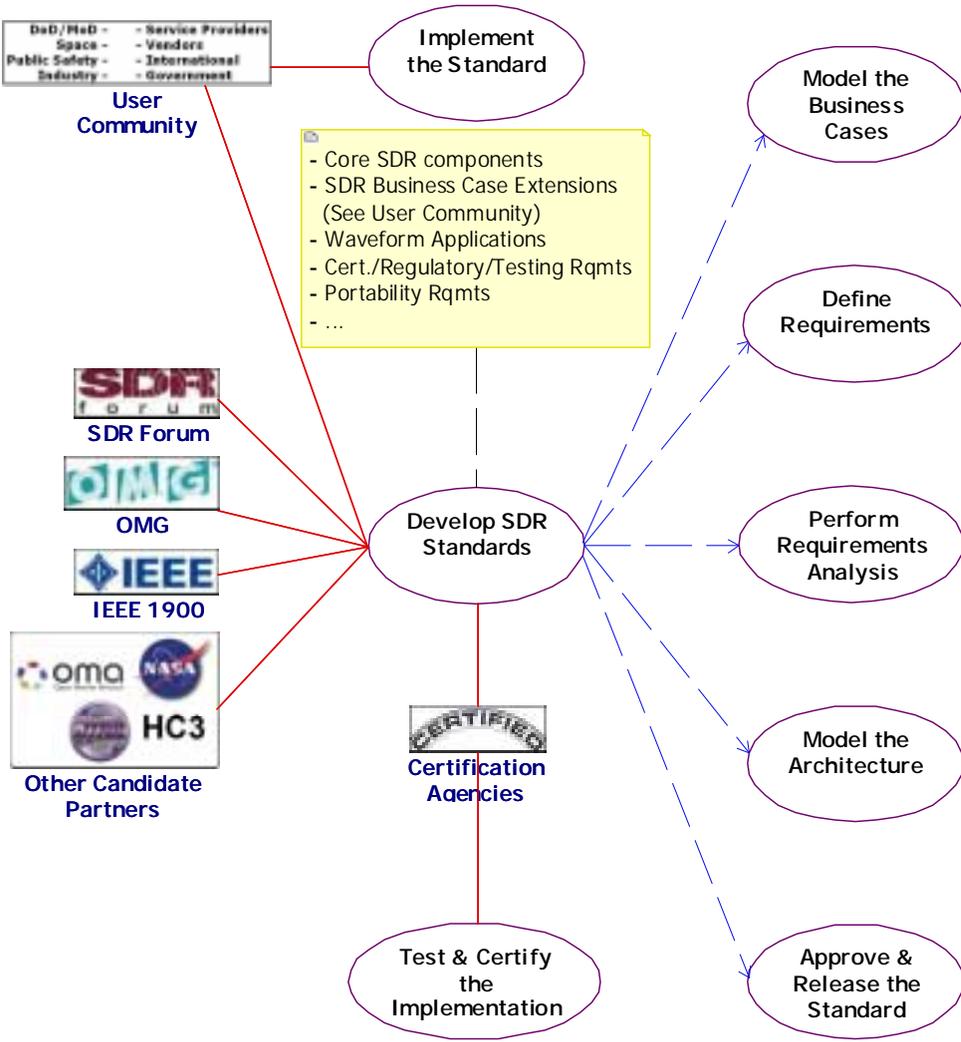
- **Rules of State**

- *Orgs Bound by Country Laws but Exceed Country Boundaries*
- *Eg. ITAR*

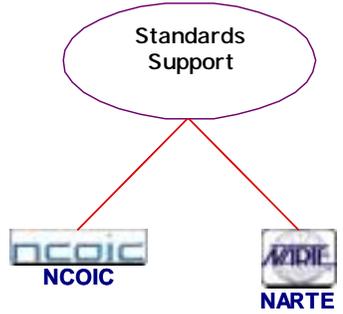
**SDO Negotiators Must
Codify Mechanisms
To Address These
Matters in Collaboration
Agreements**



Coordinating Interests & Needs



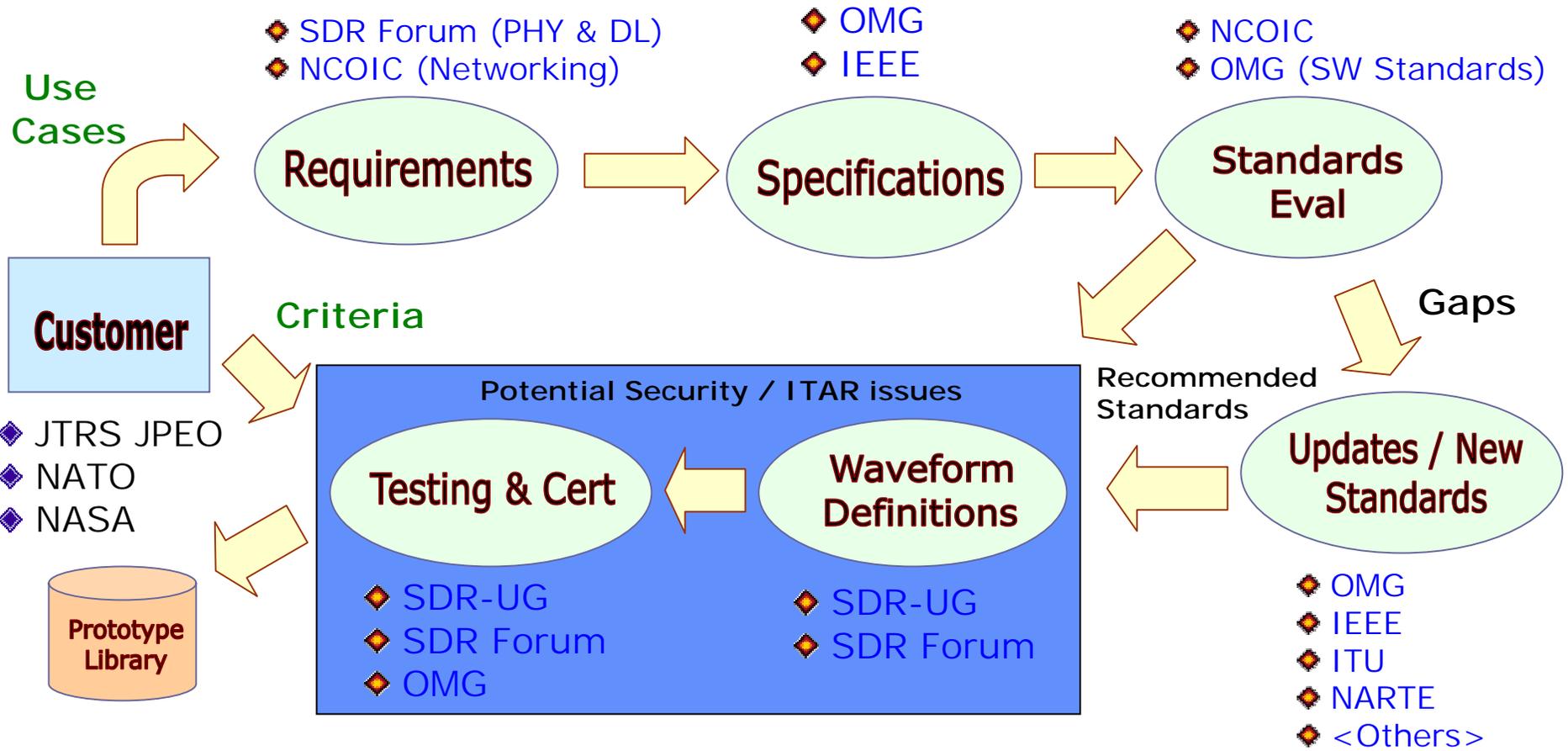
Underlying Goal: Develop SDR standards that will provide Radio Set and Waveform Application interoperability, resuability, and portability to end-users locally and internationally.



... Considers Core Competencies

A Candidate Collaboration Agreement For Task Distribution...

Vision for SDR Consortia / Workflow



Goal: Lifecycle Definition for Interoperability in Mobile Environments



Status (1 of 3)

- **Inter-Consortia Affiliation**

- **Liaisons**

- NCOIC: Bonnie Gorsic
- OMG: Richard Soley, Jamie Nemiah
- SDRF: Lee Pucker, Al Margulies
- IEEE: Steve Berger
- NARTE: Steve Berger, Brian Lawrence
- Members: John Chapin (Vanu), Mark Scoville (L-3 Communications)

- **Common Vision Statement, Workflow Development**

- **NATO's SDR European Users Group (SDR-UG) Being Discussed**

- **Membership Trades Status**

- **DONE**

- SDR Forum / OMG
- NCOIC / OMG

- **Negotiated or Negotiating (In Process)**

- SDR Forum / NCOIC

- **Pending Further Discussion**

- IEEE / NCOIC
- IEEE / SDR Forum
- IEEE / OMG
- IEEE 1900.1 / SDR Forum MoU – Updated (hibernating) moving forward, pending SCC discussions
- NARTE/SDR-UG/All

- **IEEE – February/March Changes in IEEE entity rules**

- SCC formation in March = allow orgs to be members, with equal swap
- SCC Feb 15 deadline, Mar 22+ standards board mtg decision



Status (2 of 3)

- **IEEE 1900 Addressing Recommendations for**
 - *SDR Ontology for All Stakeholders (Consortia & Industry) – on hold*
 - *Ontology Follow-on for 1900.1 Possible, Dialog Continuing*
- **Collocation of Meetings**
 - *April 2007: (DySPAN) – IEEE 1900, SDR Forum*
 - *June 2006: (OMG Tech Mtg) – OMG, IEEE 1900*
 - *Pros/Cons: Cost, Efficiency, Time*
- **SDR Forum Addressing Requirements for**
 - *OMG PIM & PSM for the SWRadio Specification*
 - *OMG PIM & PSM for the Smart Antenna RFP - submitted*
 - *OMG PIM & PSM for the Space SDR (Based on NASA's STRS RFI)*
 - *OMG PIM & PSM for Digital IF (Proposal to RFP Maturing)*
- **Integration of SDR Forum and OMG Process Timelines – Ongoing for each RFP**



Status (3 of 3)

- ***ACTIONS/Discussion Items For Future Meetings:***
 - *Inter-Consortia Event Information Publishing – Wiki Option Suggested*
 - *Have Representatives In Each Org Give Affiliation Status Report To Membership Bi-Annually*
 - *Have Representatives Participate In Leadership Telecons For Coordination*
 - *Place Work Items on Inter-Consortia Workflow*

For SCA: The OSD is Developing a Capabilities Development Document for JTRS Increment II. When Done the JPEO Can Synthesize Requirements & Technologies

Can the OSD, the JPEO, and the SDOs Codify Mechanisms to Leverage Core Competencies for JTRS Increment II?



Long-Term Objectives

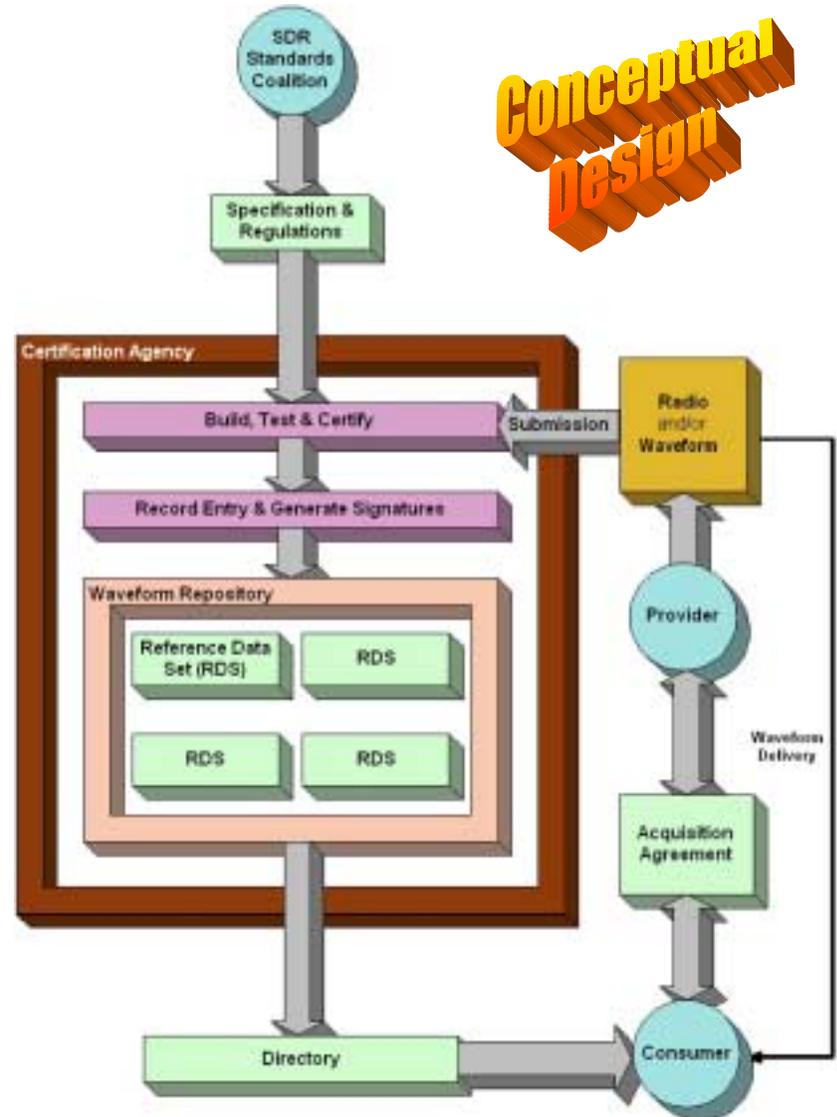
- **Build on The SDR Vision**
 - *Interoperability, Reuse, Portability*
- **Commonalize SDR Standards**
 - *Reduce Overlap, Cost, and Conflict*
 - *CF → Radio Components → A2G/HDR*
- **Expand Scope**
 - *Public Safety, Space, Government, Defense & Commercial (Handset, Infrastructure/Backhaul, Software)*
 - *Domestically and Internationally*
 - *Space & Smart Antenna RFPs, Digital IF RFP Submission (SWRadio)*
- **Broaden Certification and Repository Management Options**
 - *Balance Industry IP and Customer Oversight Objectives*
 - *Develop Credible Validation Criteria for Individuals in the Industry*



Certification & Validation (a)

*Procedure is Based on NIST/NSRL**

Conceptual Design



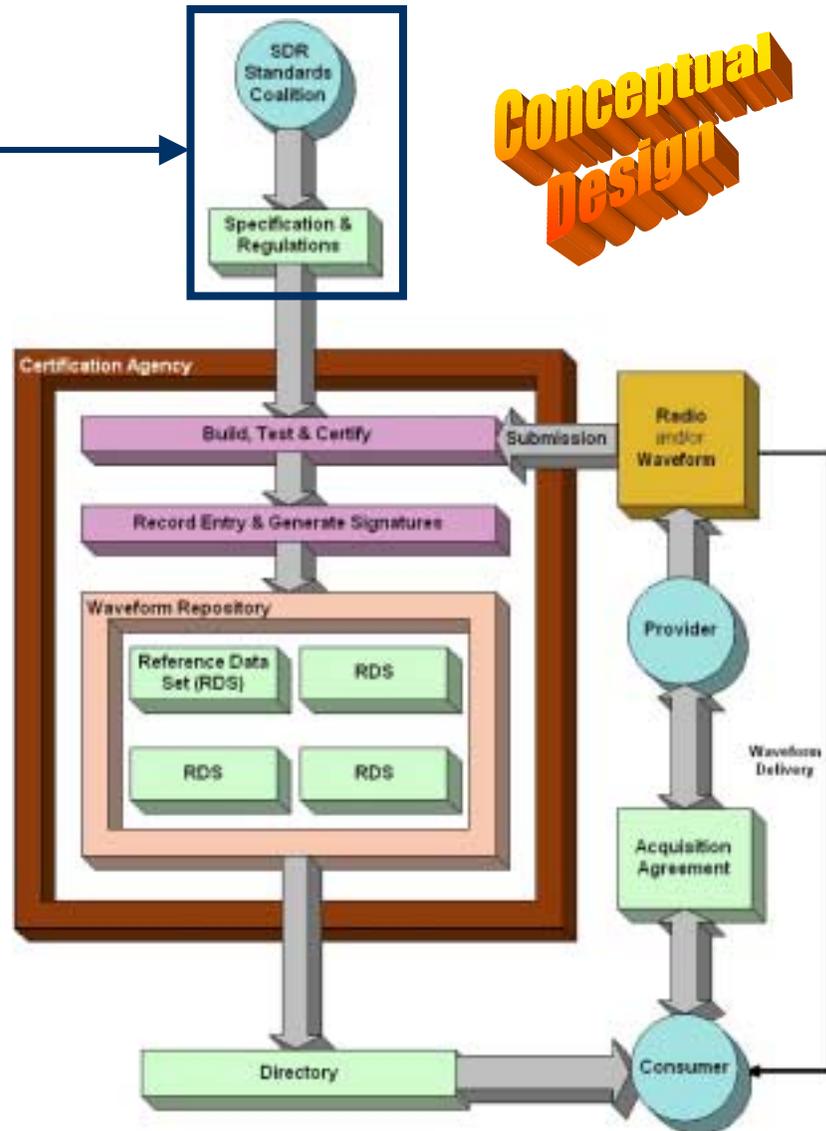


Certification & Validation (b)

Procedure is Based on NIST/NSRL*

1. Organizations Deliver Specs & Regs

Conceptual Design



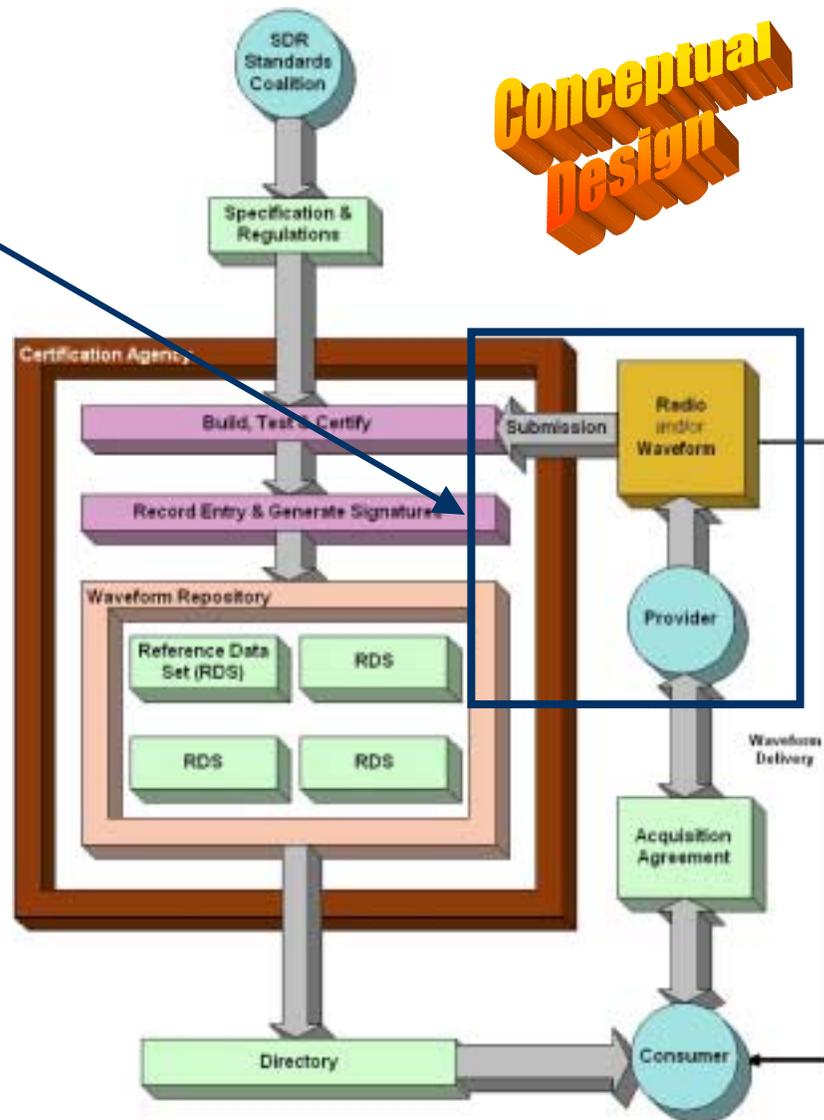


Certification & Validation (c)

Procedure is Based on NIST/NSRL*

2. Providers Implement & Deliver to Agency

Conceptual Design





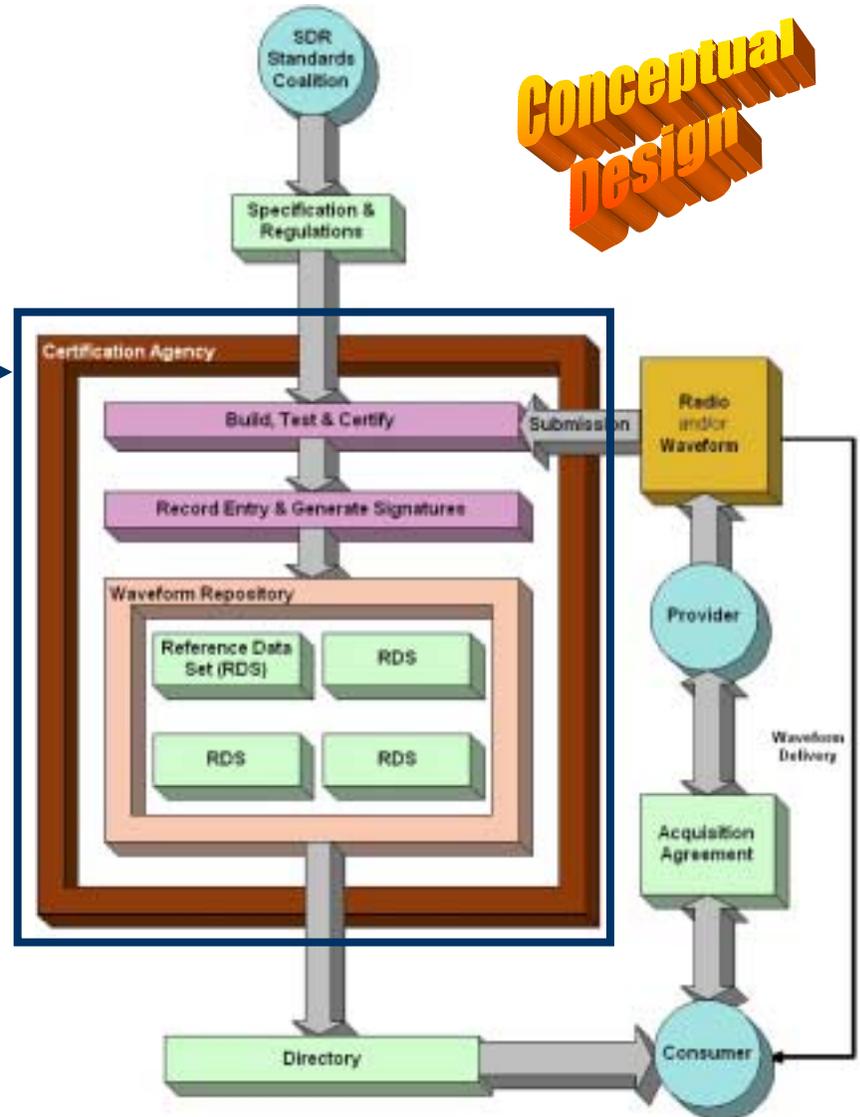
Certification & Validation (d)

Procedure is Based on NIST/NSRL*

3. Agency Build, Tests, Certs

- Create Repository Record & Signatures
- Signatures Become the Reference Data Set (RDS)
- Put RDS in Repository
- Publish Updated Standard Reference Data Group (SRDG) Directory

Conceptual Design

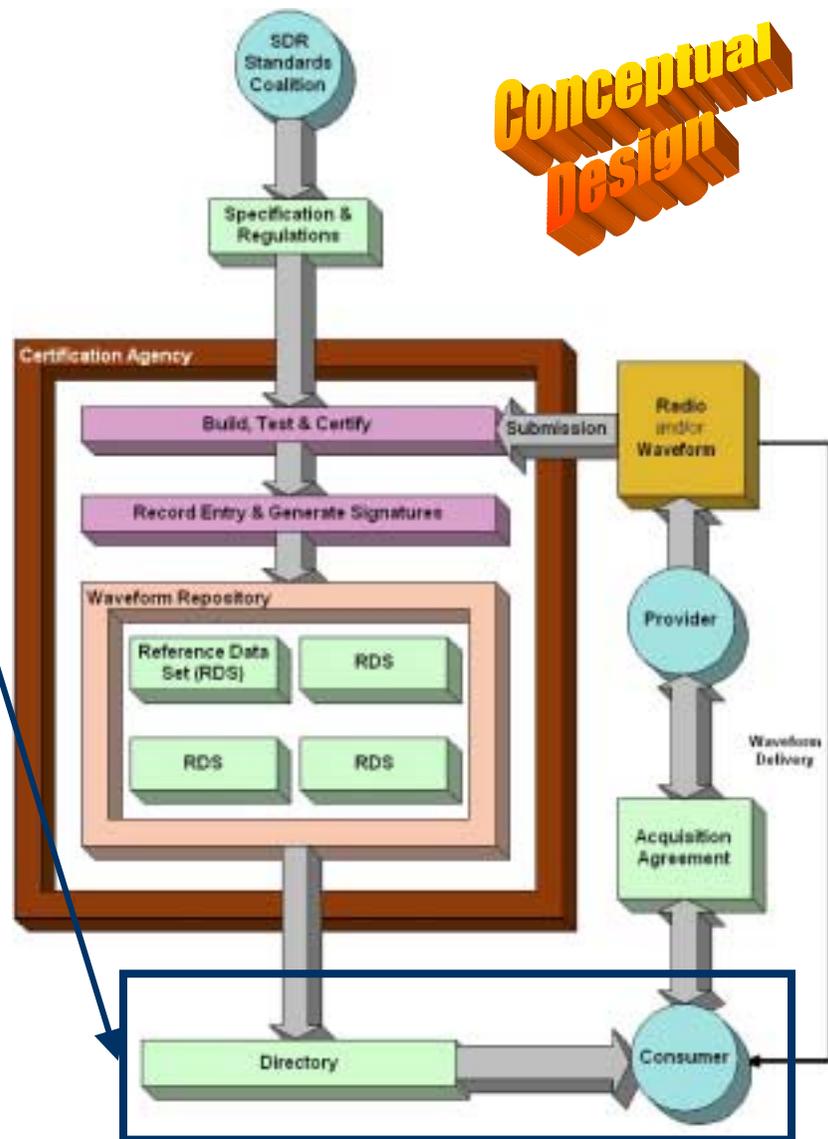


Certification & Validation (e)

Procedure is Based on NIST/NSRL *

Conceptual Design

4. Consumer Reviews SRDG Directory For Available Product Fitting the Need



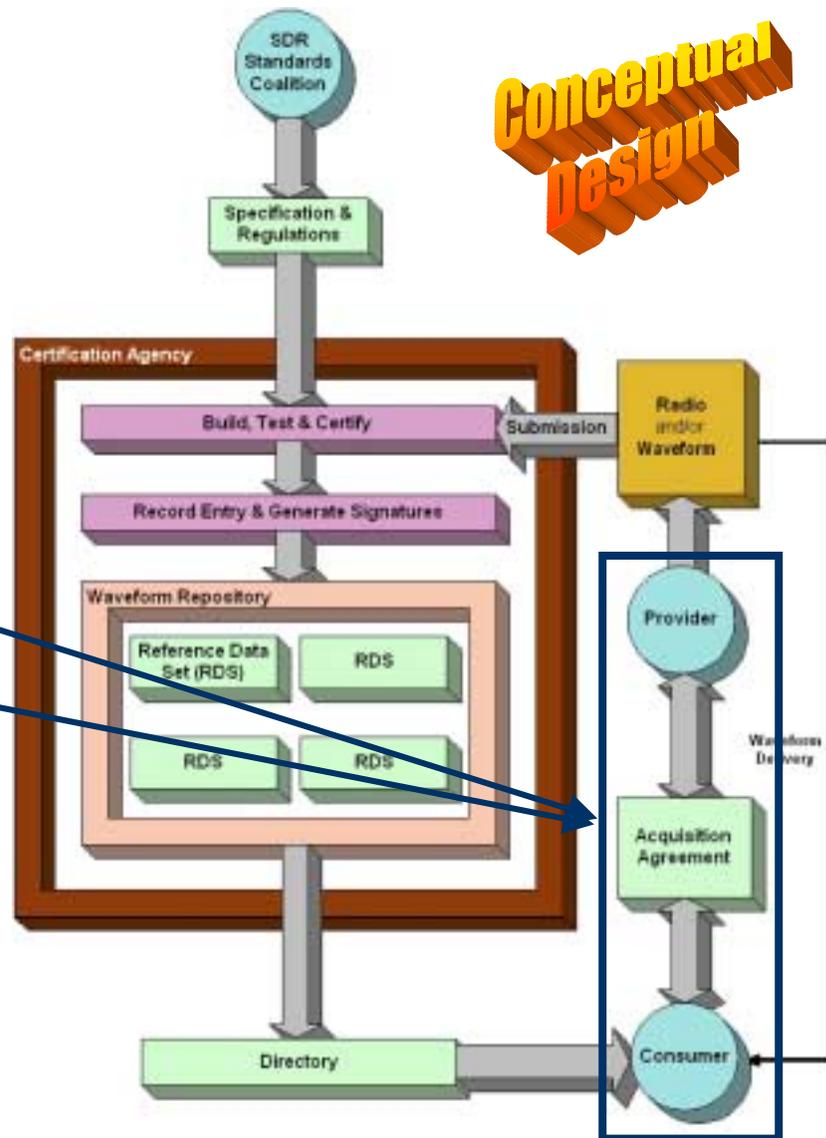


Certification & Validation (f)

Procedure is Based on NIST/NSRL*

Conceptual Design

- 5. Consumer Contacts Associated Provider
- 6. Consumer & Provider Reach Agreement



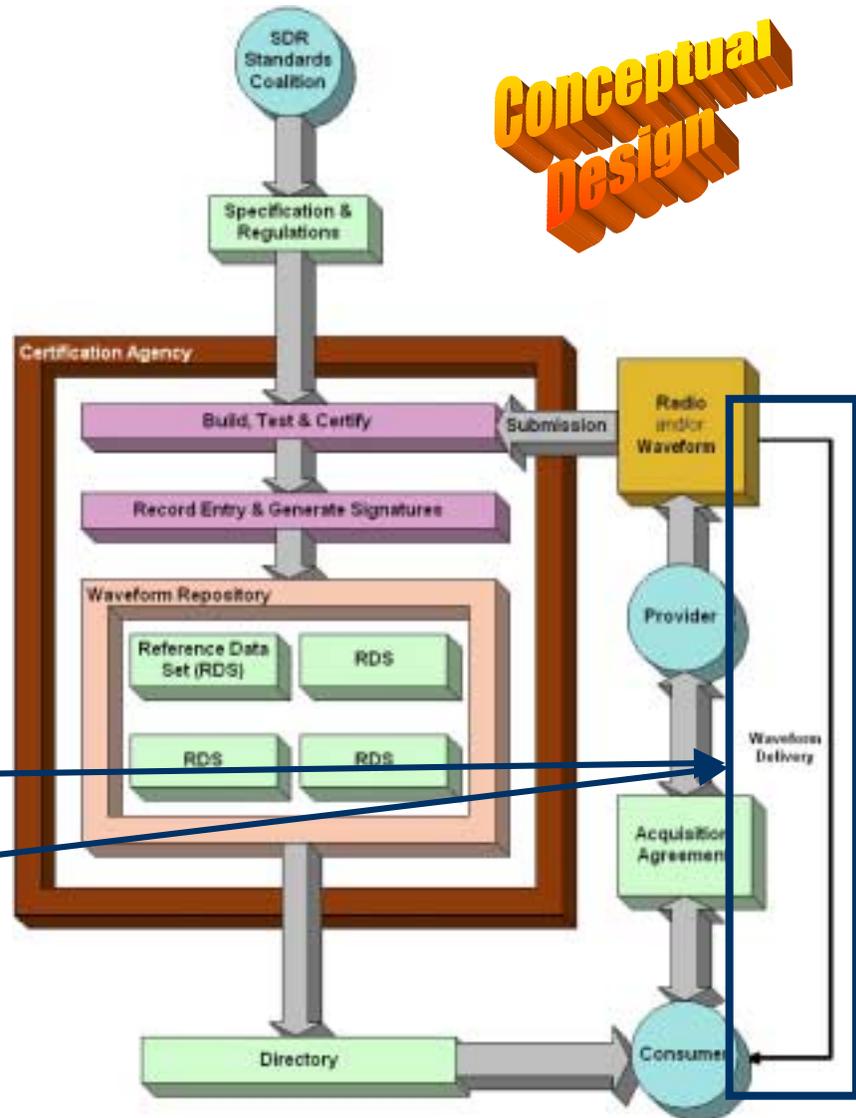


Certification & Validation (g)

Procedure is Based on NIST/NSRL*

Conceptual Design

- 7. Agreement is Executed & Product is Delivered
- 8. Product is Verified Against the RDS





Certification & Validation (h)

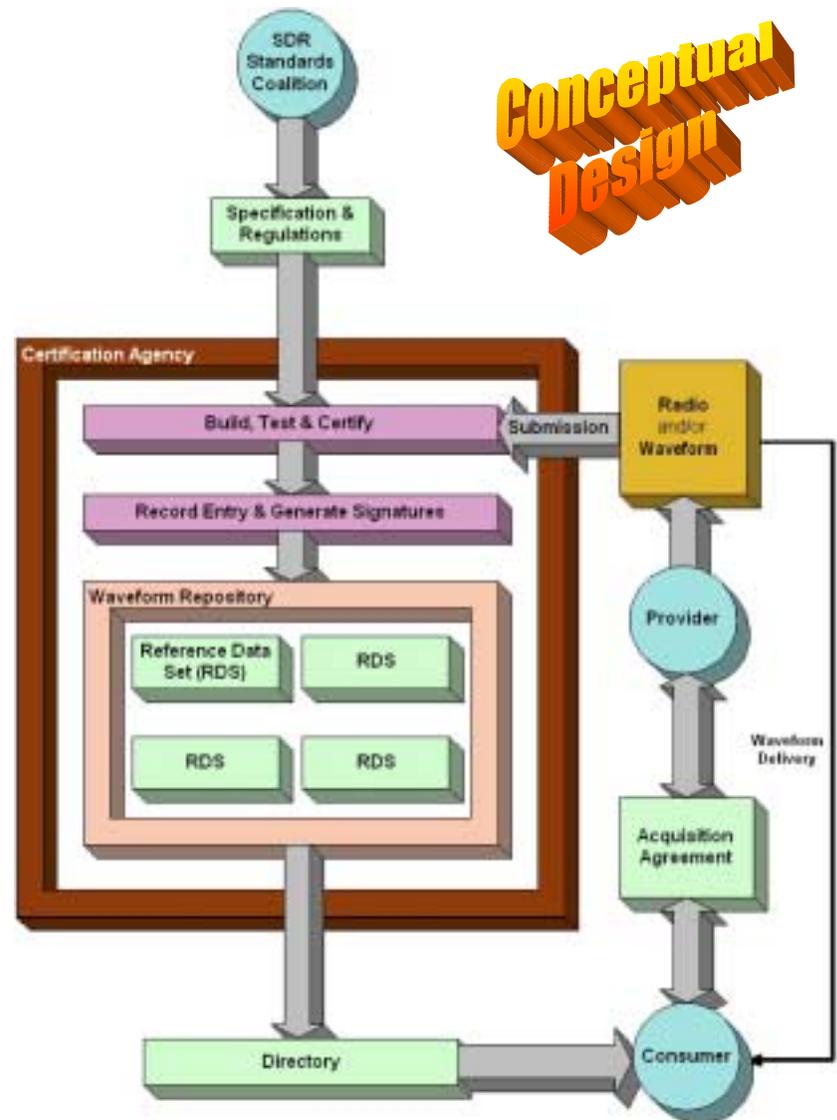
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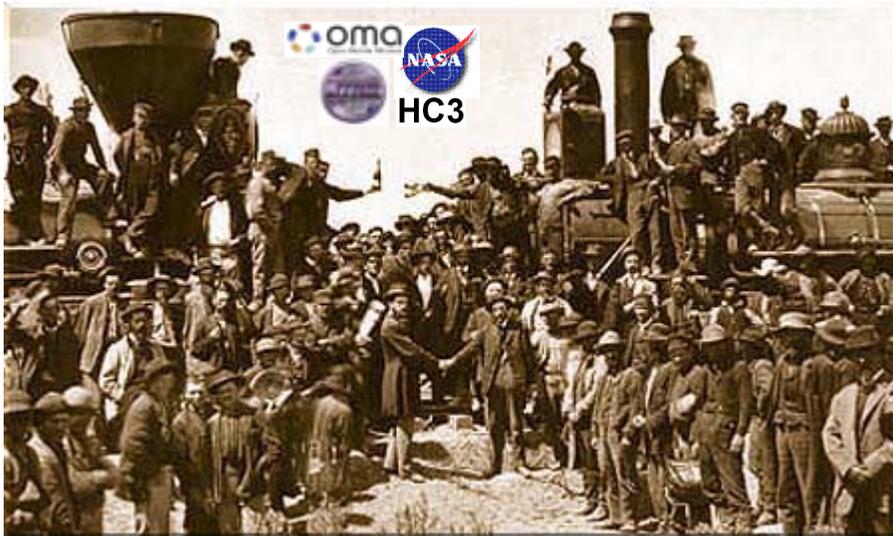
- **Considerations:**
 - JTRS Information Repository (IR) Objectives & Corporate IP Objectives -- Can Objectives Be Negotiated?
 - Multiple Agencies with Collaborated Governances?

* See http://www.nsrl.nist.gov/Project_Overview.htm

Conceptual Design



Thank-you



Educate

SDOs
Liaisons
&
MoUs

Coordinate

Agree