

NOAA/National Weather Service

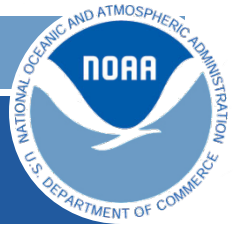
Capabilities and Requirements Decision Support (CaRDS)

CaRDS 101

NWS Field Requirements Validation
in Portfolio-based Governance

November 2016

V2.5

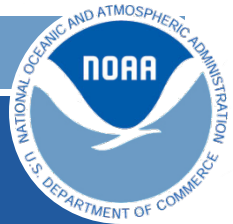


Quick Overview

CaRDS is the *process* within NWS Governance for acquiring and Validating Field Requirements.

CaRDS is managed by AFS, Analysis and Mission Support Division

CaRDS web tool provides: information, documentation, templates, and status, for all requests; and ability to upload (submit) requests.

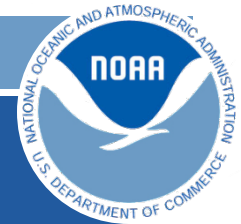


Bottom Line – Up Front

CaRDS ≠ OSIP

CaRDS is designed to be:

- Lighter – less systems engineering process & paperwork
- Inclusive – accessible by anyone in NWS
- Transparent - ability to show request status and decisions
- Responsive – letting staff know if a request has been accepted, and if not, to provide a detailed explanation
- Strategic – linked to strategic goals and AOP process
- Fiscally Linked – aligned with resources early in the process
- Accountable – requirements validated by the new Mission Delivery Council (MDC), as part of NWS Governance
- Integrated – deliberate coordination between MDC and PIC



It all starts with a “Request”

Request – a generic term for any of the following:

- “Need”
- “Request”
- “Idea”
- “Opportunity”



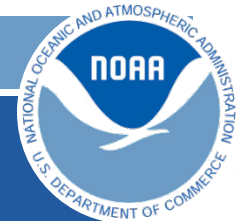
For purposes of this presentation, any such input will be referred to as a **“Request”** until validated as a **Requirement** via the new governance CaRDS process.

Request Originator – The person or entity initiating a Request.

The Originator may be *Internal* (NWS), or *External* (Executive / Legislative Branch, International, Partner, other organization or agency). Originators are expected to follow their requests through the CaRDS process as an SME.

As appropriate, external originators present their requests via their NWS contact.

External examples: FAA via inter agency agreement or Aviation Services Program.
Emergency Manager or National Media Enterprise via Partners Meeting or other venue.

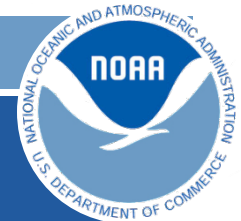


When does a Request become a Requirement?

Validated Field Requirement – A Request which:

1. Is **appropriate and applicable to the organization** - within the NWS Mission or strategic documents such as WRN Roadmap, Strategic Plan, AA Phasing Diagram, NAS/NAPA Reports, etc.
2. **Provides Benefit** - ‘corporately’ determined to be sufficiently important, necessary, or of high benefit such that investing resources (FTE, dollars, or changing a process) is justified in implementing the request.
3. **Is validated by the Mission Delivery Council (MDC)**

Note : Any validated field requirement that would cause a change in or introduce a new product or service must work through **Directive 10-102**, Products and Services Change Management, formerly known as “New or Enhanced Products and Services”. CaRDS Tier 2 replaces the 10-102 Cross Agency Review Team (CART).



A Quick look at the new Councils

Executive Council

Chair: AA

- Provides NWS strategic direction
- Approves NWS planning and budgeting documents
- Serves as decision maker for high impact, high visibility issues including NWS transformational changes

Members: AA, DAA, CFO, COO, OPPSD

Mission Delivery Council

Chair: COO

- Transparently validates and prioritizes Field needs
- Discusses and recommends operational and service policies to ensure successful and consistent mission operations

Members: COO, AFS, NCEP, NWC, AR, ER, CR, SR, PR, WR

Portfolio Integration Council

Chair: OPPSD Director

- Ensures cross-Portfolio integration to support needs of mission execution
- Integrates the “Left side” under OPPSD with the “Right side” under COO

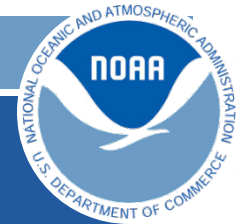
Members: OPPSD, COO, NCEP, NWC, Rotating RD, all five Service Delivery Portfolios, AFS

Enterprise Risk Council

Chair: DAA

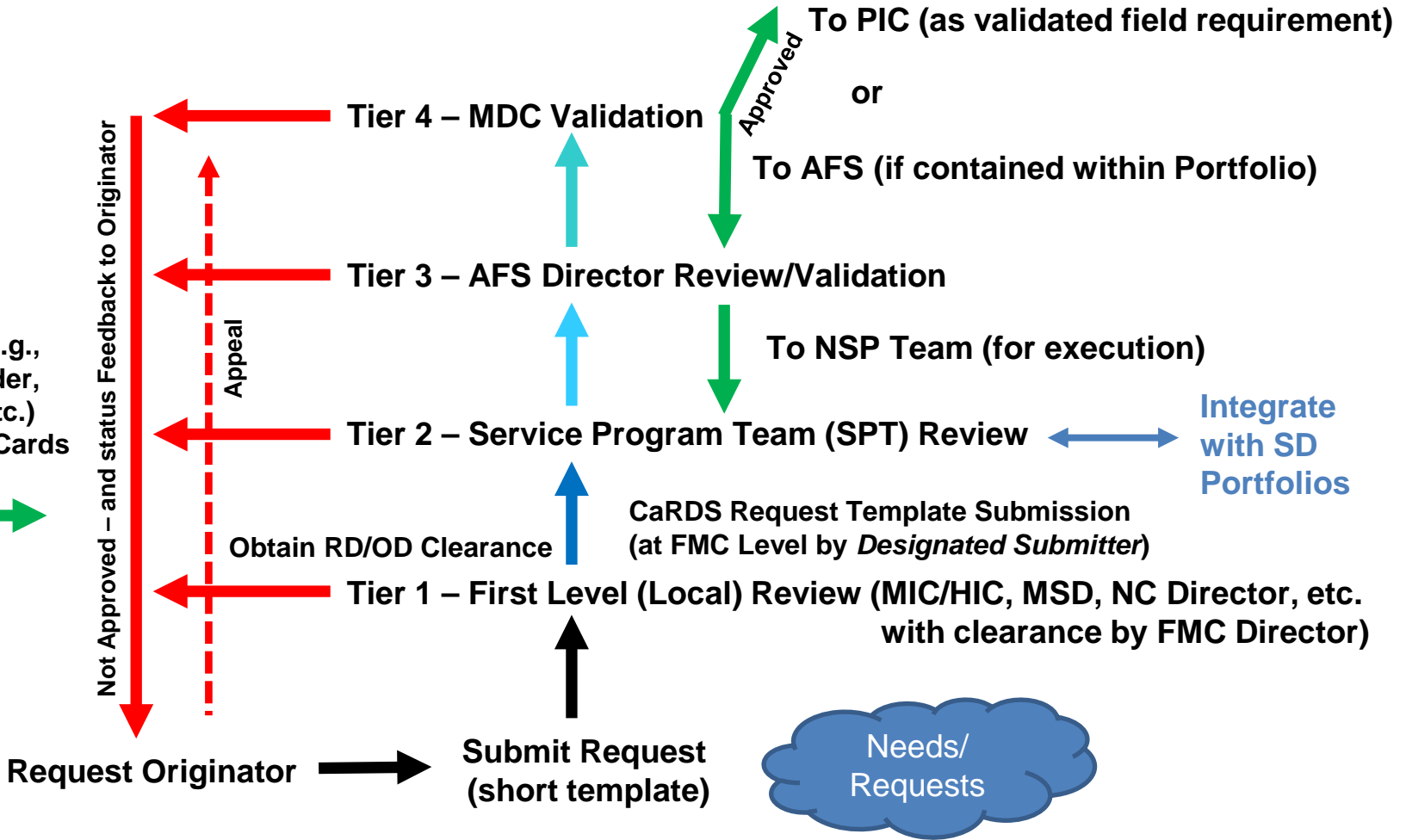
- Identifies and monitors internal and external enterprise risks and issues
- Approves mitigation strategies for enterprise risks

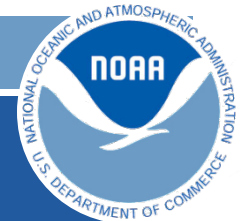
Members: DAA, ACIO, CFO/CAO, COO, ERM, NCEP, NWC, OPPSD, Rotating CONUS RD, Rotating OCONUS RD



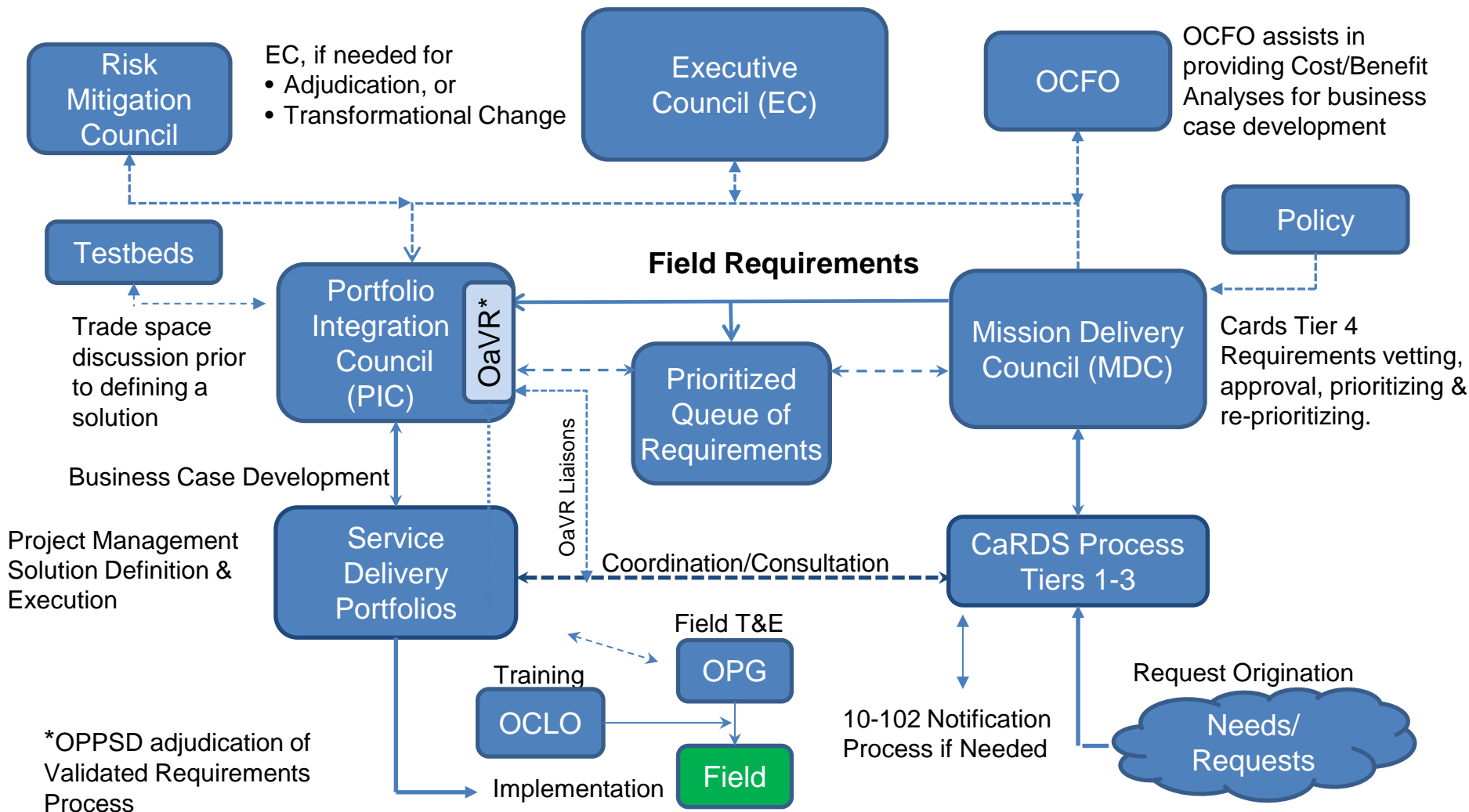
High-level Process Overview for CaRDS

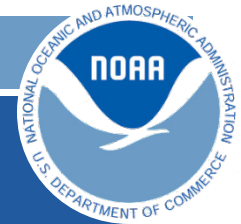
A Mandate (e.g., executive order, public law, etc.) would enter Cards at Tier 2





CaRDS in the Larger Organizational Context





The Fuel that makes CaRDS go – People!

CaRDS Designated Submitters: Designated Regional/Office CaRDS points of contact: review requests, conduct Tier 1 approval decision, and submit CaRDS Requests.

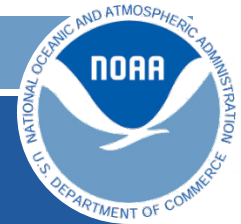
Service Program Teams (SPT): Each AFS National Service Program has a corresponding SPT. The SPTs Evaluate requests, coordinate information with all applicable field units (Regions/Centers) and Service Delivery Portfolios, make SPT approval decision (Tier 2) and prepare Validation Decision Package for AFSO Tier-3. SPTs also conduct evaluation for 10-102 process -- replacing the Cross Agency Review Team (CART).

AFS 1 Corporate Project Teams (CPT): The CPTs have a similar role as the SPTs for the following areas: IDSS, Impacts Catalog, Ecological Forecasting, and National Blend of Models.

Products and Service Change Management (10-102): Coordinate and oversee the process for putting out Experimental products for comment and review, and coordinate process for the transition of experimental products to operations.

Notes:

- (1) Field FMCs identify SMEs on the SPTs in support of CaRDS process.
- (2) SPTs membership includes NWSEO advisors.
- (3) Requirements Leads to be identified within each OPPSD Portfolio Office to support requirements analysis efforts.



Process Steps - Overview : Tier 1

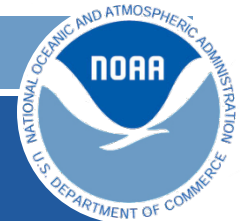
- **New Mission Need or Requirement Request** template document is downloaded from the CaRDS site and filled out by the NWS originator.
- The request is reviewed by the originator's manager, and if approved it is forwarded to the **Designated Submitter**.

Note: The manager reviews the document with consideration for its applicability, appropriateness for the NWS mission, similar under development or existing capability, adherence to policy, and benefit to the organization or weather enterprise. The manager should address questions or potential issues with the originator.

- If the **Designated Submitter** approves, the Request is Submitted via CaRDS website.

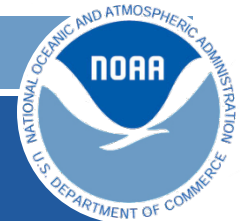
Note: Designated Submitter reviews request to ensure appropriateness, concurrence with policy, consider known similar capabilities, and makes the request 'visible' to the FMC director in the manner specified by their FMC director.

---- This completes Tier 1 Approval ---



Tier 1 – Additional Details

- The originator is encouraged to reach out to their regional program leads/focal points, the SPTs, and the CPTs in the development of the request for coordination of details and as an early check to identify similar efforts.
- The request should capture and clearly indicate mission gap and the proposed requirement and not focus on the solution.
- The request may mention a proposed solution with the understanding that an alternate solution may be the final outcome of a validated requirement.



Process Steps - Overview : Tier 2

- Once a Request has been submitted, CaRDS Analyst performs QC , confirms appropriate SPT and Notifies SPT and PSCM (if 10-102 candidate) of new Request.
- SPT* performs initial review, identifies issues, and prepares for meeting**.

Meetings are held via teleconference to address request, identify issues, obtain SPT approval decision from all members, and ensure they have information for making a Validation Decision recommendation.

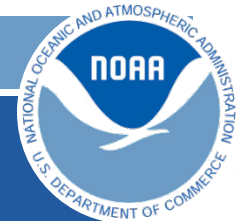
FOCUS is on decision for **Requirement Validation**.

i.e. Should the requirement stated in the request be validated ?

- SPT completes a Validation Decision Information document for AFSO, Tier-3 with their Approval decision.

* More than one SPT/CPT may be engaged in the review process.

**If no issues identified or anticipated, review and coordination may take place via email.



Additional SPT Detail

If SPT determines that a Request is NOT appropriate, they may **“Not Approve”** it.

- A rationale must be provided.

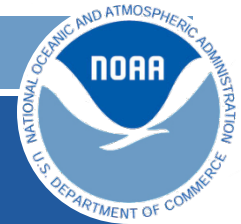
Requests which are Not Approved by the SPT will still be provided to AFSSO indicating their Not Approved decision in order to ensure situational awareness and notification ‘up’ the chain.

In such cases, the Request stops at Tier 2: Not Approved.

- CaRDS Analyst will update the information and status, and notify the Submitter and the Originator.

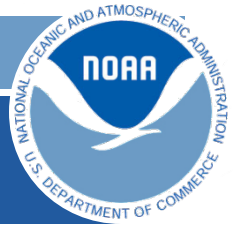
If any SPT member has an opposing view / vote, their vote and rationale are captured and provided to Tier 3 for situational awareness and consideration during Tier 3 evaluation.

“Not Approved” requests may be elevated by the originator or SPT member to the next Tier, AFSSO.



Additional SPT Detail and Voting

- Each team member represents their respective Office/Region/Center.
- Members have the responsibility to report-up appropriate information and ensure their vote is representative of, and coordinated within their FMC.
- Members are to consider the benefit to corporate NWS, not just whether or not it applies to their specific program/office/region.
- Each FMC (Region, Office or Center) has one vote regardless of the number of members on the team(s) from the FMC.
- If members from the same office/region/center do not all agree, they should resolve their differences either amongst themselves or with their management – up to their director level if needed.



Process Steps - Overview : Tiers 3 and 4

TIER 3

- AFS Director addresses the request and may:
 - Approve the request and present it to the Mission Delivery Council
 - Approve and Validate Requirements which can be accomplished within AFS portfolio.
 - Not Approve the request¹.

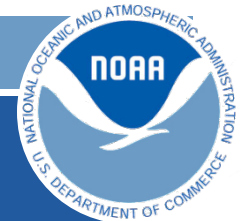
TIER 4

- MDC addresses request² brought forth from Tier 3 and forwards Validated Requirement to the PIC or AFS.

Notes:

¹ MDC is notified of any Tier 3 Not approved and Tier 3 Validated requirements for situational awareness. Requests Not Approved at Tier 3 may be elevated to Tier 4, MDC.

² Originator and or Tier 2 SPT/CPT 'Champion' will prepare a short briefing for the MDC. The originator is invited to the MDC meeting addressing their request.



Process Steps - After Tier 4

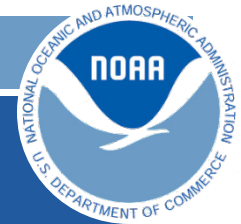
MDC Validated requirements are placed in a “Prioritized Queue of Requirements” and addressed by the OPPSD Adjudication of Validated Requirements (OaVR) process.

High Level OaVR process outline

- Obtain ROM and schedule for Portfolio Integration Council (PIC) meeting.
- PIC will review list of prioritized requirements and bin them into 2 Groups.

Group 1 - Assign to a portfolio for execution: if solution is readily identifiable, is easily implementable within existing resources, and has minimal impact on current OPPSD activities.

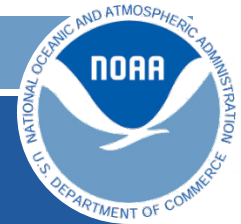
Group 2 - Requirements where additional information such as developing a range of alternatives and cost estimate is required before further action can be approved.



Process Steps - After Tier 4, continued.

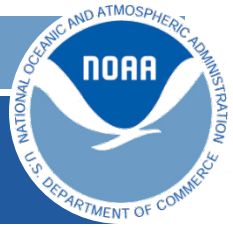
- For **Group 2** Requirements, the following criteria will be used in identifying which requirements further research is warranted:
 - MDC priority
 - Feasibility
 - Anticipated benefit versus anticipated cost
- Requirements scoring high on the criteria will be assigned to a lead Portfolio for development of an Investment Justification Request (IJR).
- Requirements not scoring high will be returned to the queue and reviewed with the MDC

Material disagreements between the PIC and MDC over the adjudication of validated requirements may be escalated to the Executive Council for resolution.



Process Steps - After Tier 4, continued.

- The PIC will review IJR's on a Quarterly basis and make a GO/NO GO decision based on the information provided in the IJR's and current activities.
- If a GO decision is made and a solution can be implemented within existing resources
 - and no other milestones are affected, the solution will be assigned to a lead Portfolio for execution and execution status shared via the PIC, MDC and QPR.
 - and other milestones are affected, the solution will be considered as part of the AOP process.
- If a GO decision is made and the solution needs new resources to implement, the solution will be considered as part of the SEE process.
- If a NO GO decision is made the requirement is placed back into the queue and reviewed with the MDC



Process Steps - After Tier 4, continued.

Requirements in the Queue will be evaluated periodically by the MDC and the PIC and re-addressed if there are changes in priority, resources, or other circumstances which warrant taking a look at it again or re-evaluating scheduling and resource assignment.

Starting Point: New Mission Need or Requirement Request

The following fields are required to enter a “request” into CaRDS:

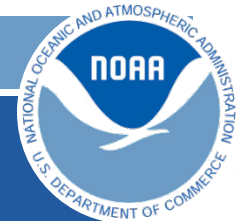
- Request originator contact information
- Statement of Need (SON) that addresses the request
- Is there a time sensitivity with the request?
- Will the request fill an existing operational gap?
- Linkages to strategic drivers or mandate
- Summary of benefits to NWS
- Link to a National Service Program (NSP)
- Rough Order Magnitude (ROM) estimate of investment

CaRDS



The Process





New Mission Need or Requirement Request Template

1 Statement of Mission Need or Requirement

1.1 Mission Need or Requirement

Provide a brief description of the request. Address the mission related gap and the proposed requirement. Do not address the solution in this section (you may indicate a proposed solution in section 4).

1.2 Time Sensitivity

If time sensitive, state when the request would need to be addressed and why.

1.3 Existing Operational Gaps

Describe the operational gaps, shortcomings, or challenges that will be addressed.

2 Justification and Benefits to the NWS

2.1 Strategic Drivers and Mandates

If available, link the request to a specific initiative, mandate, law, stakeholder need or other justification.

Table 2.1: Justification	
Does the requirement address a mandate by NOAA, DOC, OMB, Executive Order, or Law?	Y / N
Is the requirement needed to satisfy a specific external organization's needs?	Y / N
Does the requirement address a specific DOC, NOAA, or NWS strategic initiative?	Y / N
Explanation of justification:	
[Provide explanations to "yes" answers above. If the requirement addresses a strategic initiative, indicate which one and where (i.e., the NWS Phasing Diagram, NWS Planning Guidance Memo, NWS Weather-Ready Nation Roadmap 2.0, NWS Weather-Ready Nation Implementation Plan, or other (please specify). Be specific with any stated justification, ensuring strong linkage where applicable.]	

2.2 Benefits

Identify how satisfying the request will benefit the NWS, partners, the public, or other stakeholders.

Table 2.2: Benefit to the NWS
Describe how the request will benefit NWS' mission to protect life and property.
Describe how the request will help the NWS better serve our partners and the public.
Describe how the request will improve how NWS operates.
Describe how the request will help NWS be a better steward of government resources (e.g., time or money).
Explanation of benefits to NWS:
[Provide the benefits in implementing this request addressing the above statements as applicable]

3 National Service Program

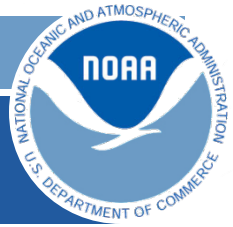
Identify the most appropriate Analyze, Forecast and Support Office [National Service Program](#) to vet and address this request.

Table 3.1: Identification of lead National Service Program					
Program Name	X	Program Name	X	Program Name	X
Aviation		Tropical		Public	
Fire Weather		Winter Weather		Space Weather	
Marine		Climate		Tsunami	
Severe Weather		Water Resources		Overarching (broad cross-cutting)	

4 Estimated Resource Needs

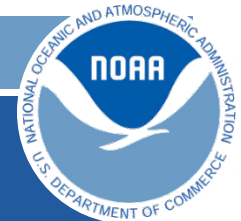
Provide an estimate of resource needs associated with the request. Note - This is an opportunity to provide a general idea of resources needed.

You may include a proposed solution; however it is not to be considered as the 'only solution'. Validation of the requirement for this request does not imply approval of proposed solution. Solution analysis will take place after requirement is validated.



RECAP

- CaRDS is the NWS Governance process for Validation of field Requirements.
- Requests are evaluated for the applicability and appropriateness, i.e. should this be a validated “Requirement”.
- Tier 2 teams and their Regional members play a key role in ensuring we have well documented and coordinated requirements.
- Development of the necessary capability to meet the validated requirement is based on priority and resource availability.



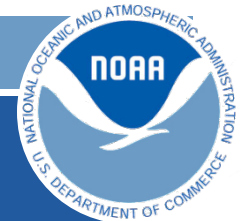
What about 10-102 ?

“10-102” still exists and we will continue to evaluate and provide for comment and review of products and services before becoming operational.

The 10-102 process is now called:

Products and Services Change Management (PSCM)

- The SPTs and CPTs replace the Cross Agency Review Team (CART) in evaluation of Experimental products.



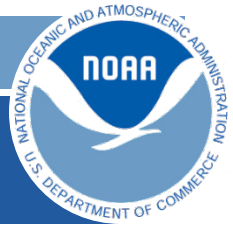
10-102 - Continued

What else is new with 10-102?

Proposals for new or enhanced experimental products or services will start as a CaRDS request (Preferably before any significant development is done).

Benefits:

1. Early check – is this a valid requirement? (should NWS do this).
2. Early check and guidance with respect to policy.
3. Transparency – are other similar efforts underway and identification of other proponents.
4. Address scope and National vs Regional or Local use.
5. Early input, feedback and suggestions which can improve the final product or service.

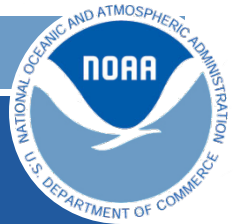


Experimental products under 10-102

PROPOSING a NEW Experimental Product :

- New Experimental Products (and services) request are submitted into CaRDS for Validation of the Requirement, coordination, and mitigation of duplicate efforts for the proposed product or service.
- Once the requirement is Validated, then we proceed with, or complete, development followed by any necessary PSCM coordination (notification, survey, etc.)

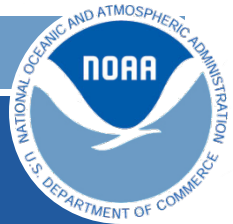
Bottom Line: We start by getting the requirement validated, then proceed or complete necessary development.



Existing Experimental Products

Existing Experimental Product (currently under comment and review):

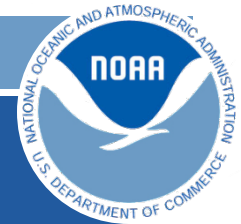
- When evaluation period is complete, the PSCM team will coordinate the review and decision process for approving experimental product changes (extending comment period, or transition to Operational, or Discontinue).
- PSCM will perform initial review and policy checks, then engage the appropriate SPT/CPTs for evaluation, coordination, and approval decision. National products will continue to be evaluated for approval by AFSSO.
- PSCM works with originator to prepare approval package.



10-102 Examples

Example: Request which went through CaRDS; approved as Validated Requirement, coordinated through MDC and PIC, has been developed to the point where the result is a new Product, and is 'ready' to be implemented.

1. Developer informs PSCM or CaRDS analyst that development is complete and ready for test / implementation.
2. PSCM coordinates SPT review and preparation of Experimental product package.
3. If National, decision package is completed and forwarded for Tier 3 approval.
4. PSCM coordinates Experimental Product activities (posting, notification, etc.).
5. At the end of the comment period, PSCM coordinates transition to operational activities.

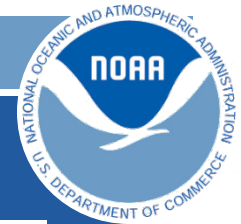


10-102 Examples

Example: Request submitted as and already developed 'Experimental Product'

1. Request is submitted into CaRDS and undergo review by PSCM and SPT to:
 - (a) Evaluate Requirement and approve/validate if appropriate, AND consider if proposed method for generation is viable and sustainable. (Tier 2)
 - (b) If National, complete Validation Decision package for Tier 3 approval decision.
2. If Tier 2 or Tier 3 does Not Approve the request, development effort was 'wasted'.
3. If approved and solution acceptable (truly ready for Experimental Comment/Review), PSCM coordinates Experimental Product activities.
4. If approved but alternate solution is needed, the request continues through CaRDS.

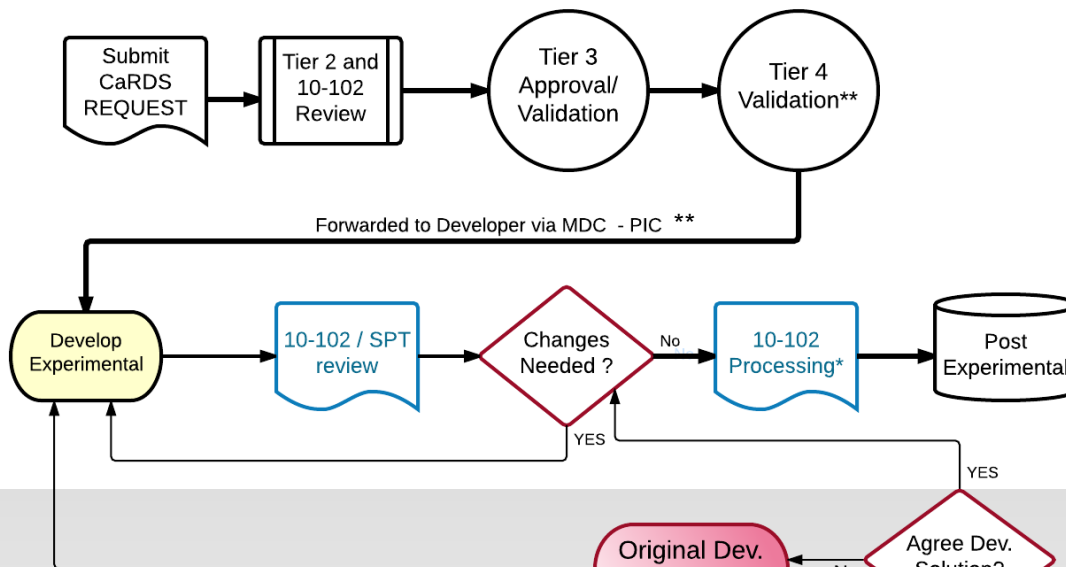
Commentary: This highlights the need to FIRST put in the Request and have the requirement validated, THEN we can develop. Otherwise we run the risk of the request being not validated, or decision is made on an alternate solution, resulting in wasted development time and effort.



10-102 "Requests" for National Products

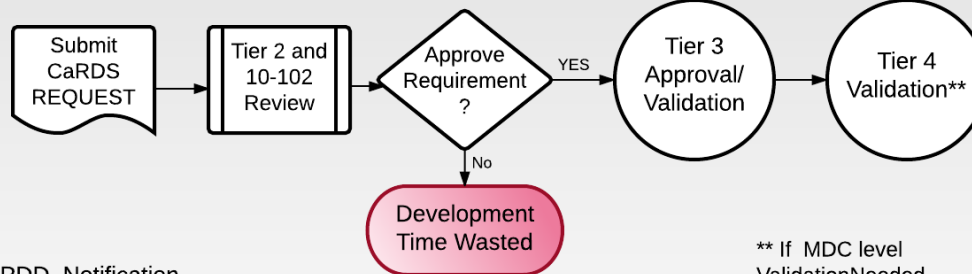
Preferred Path

I have an IDEA for a National product



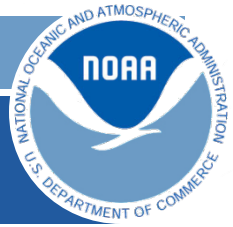
"Old School" Path - Has Risks

I already DEVELOPED a National product



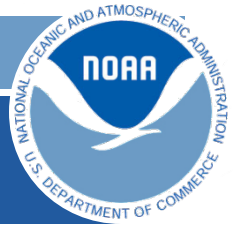
* 10-102 Processing: Preparation or updating PDD, Notification, Survey, updating SPT / Validation Decision Template, and "National" (AFSO) Approval

** If MDC level Validation Needed



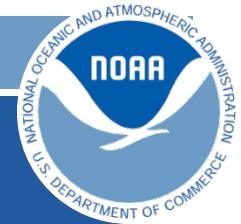
NEXT STEPS

- Finalize details on OaVR Process
- Write Procedural Directive for CaRDS specific activities.
- Re-Write Directive for 10-102.



CaRDS – Backup Slides

Backup Slides



CaRDS Website: <https://nws.weather.gov/products/CARDS/>



- HOME
- TEMPLATES
- CaRDS INFO
- Other RESOURCES
- SUBMIT NEW REQUEST
- REPORTS

CaRDS

Capabilities and Requirements Decision Support

Next Planned Meeting mm/dd/yyyy

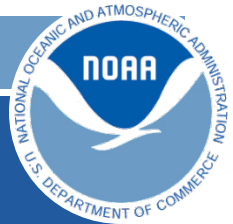
Requests to be addressed:

Statistics					
Total Requests	Processed & Closed	Approved Experimental	Implemented/Operational		
40	4	6	1		
Tier 1 1	Tier 2 - SPT 15	Tier 3 - AFS 5	Tier 4 - MDC 2	Validated MDC: 7 AFS: 3	PQR

Quick List - Latest entries first

- 16-040 * A Baseline Collaboration Tool for River Forecasting: Implementation of CHPS Clients at WFOs and Complementary Modification at Supporting RFC AWIPS/CHPS Tier 1 - Initial Entry
- 16-039 National Weather Service Collaboration Requirements Tier 2 - Under SPT Review
- 16-038 NOAA Weather Radio Transformational Change (NWRTC) into Weather Information Mass Dissemination (WIMD) Tier 2 - Under SPT Review
- 16-037 NWS Interactive Web-Based Map Tier 2 - Under SPT Review
- 16-036 Probabilistic Rip Current Guidance and Coastal Hazard Product Improvements Tier 2 - Under SPT Review
- 16-035 * Total Water Level and Inundation Guidance, Service, and Product Improvements Tier 2 - Under SPT Review
- 16-034 * Using GFE and the NDFD to Generate and Display River Forecast Center Significant River Flood Outlook (SRFO) Product Tier 2 - Under SPT Review
- 16-033 Probabilistic Guidance on High Impact Hazards Tier 2 - Under SPT Review
- 16-032 * National Observed Engine Needs for the NWS Water Program Tier 2 - Under SPT Review

Title Keyword



Designated Submitter Upload Form

Designated Submitter upload form: All that is required is to select the Mission Need or Requirement Request document and click on Submit Request. Submitter information is automatically populated.

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Note: As a Designated Submitter you should ensure that this Request:

- Is appropriate, Applicable and provides benefits to NV/S
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- Has been made visible to the FMC Director as appropriate
- Has been reviewed for possible conflict or inclusion with other known efforts underway

Submitter:	Name Carlos Diaz	Office w/AFS13	Email Carlos.Diaz@noaa.gov	Phone (301) 427-9303
Note: If the Office or Phone number above (obtained from the LDAP directory) are incorrect, please enter correct information.				
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