



Operations and Maintenance (O&M) of NOAA IOC CDRs

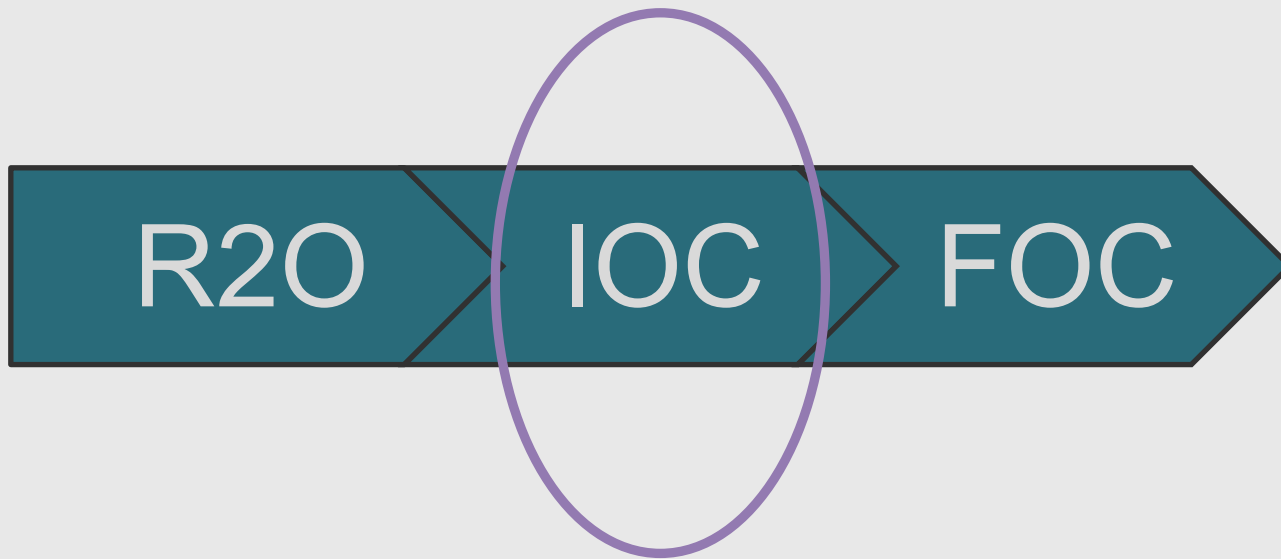
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O&M Project Manager
Center for Weather and Climate
NOAA's National Centers for Environmental Information

August 4, 2015

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CDR Phases



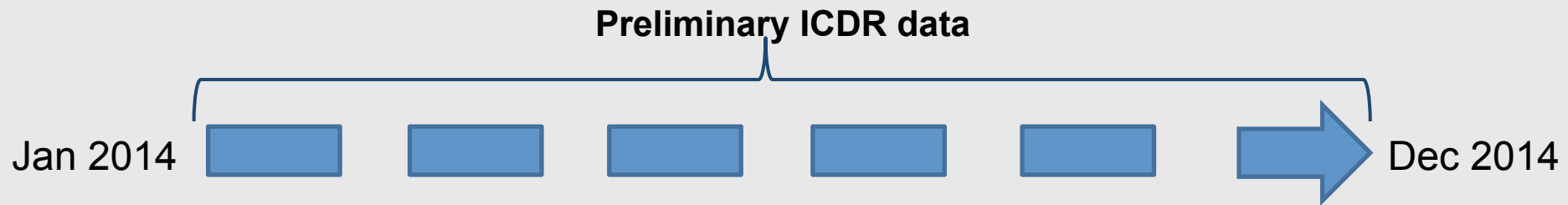


CDR Sustainment

- 30 Initial Operational Capability (IOC) CDRs
 - IPT members do not change from R2O
- Forward processing of a mature, operational baselined CDR
 - Submit routine data updates, frequency varies per CDR
- Work agreements to capture requirements
 - Grants, BOPS, IAAs and Contracts
- Additional PI deliverables for IOC CDR sustainment
 - Implementation Plan
 - Quality Assurance Procedure
 - Quality Assurance Results (with initial delivery and each year)
 - Data download metrics, if applicable

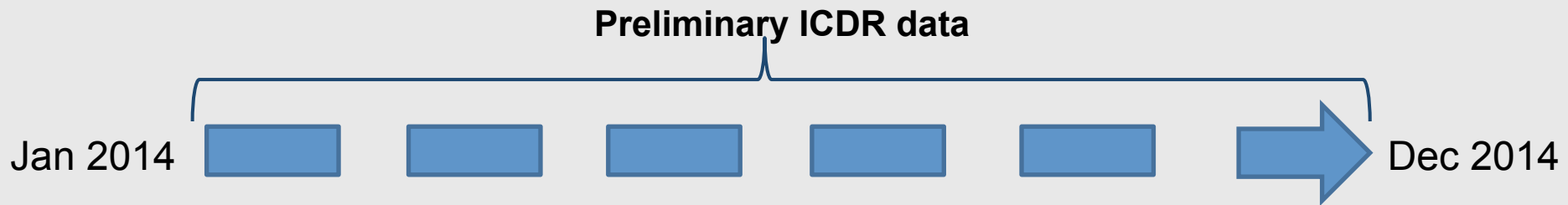
Preliminary and Final data

- To expand our user base, we now support preliminary Interim CDR (ICDR) data production.
 - To reduce latency



Preliminary and Final data

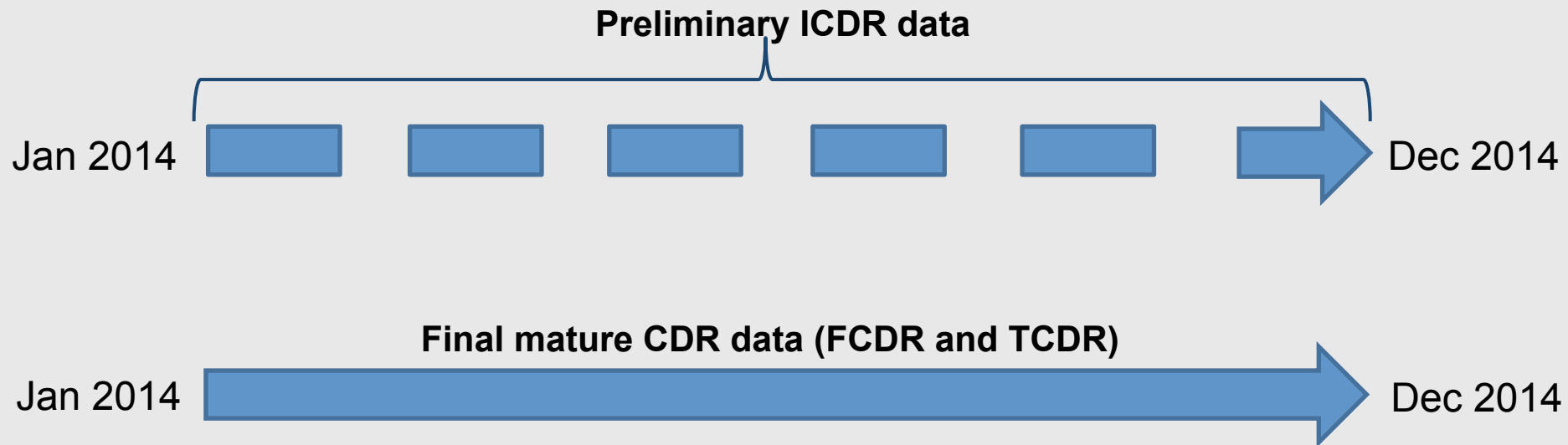
- To expand our user base, we now support preliminary Interim CDR (ICDR) data production.
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Reprocess entire year of data

Preliminary and Final data

- We prefer preliminary ICDR data be replaced by final FCDR/TCDR data no more than once a year.



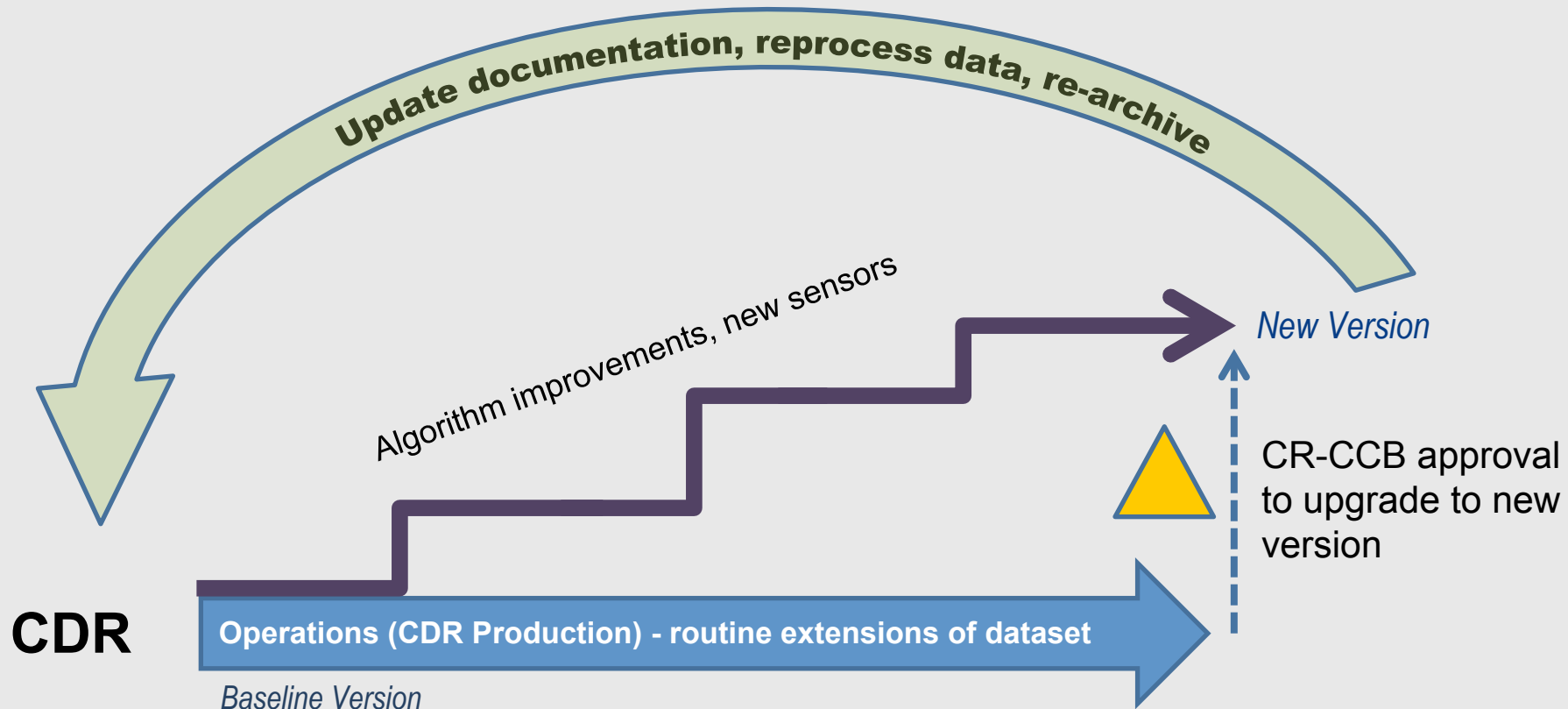


Improving the IOC CDR

- New versions will become available throughout the lifecycle of your CDR
- Configuration Management Best Practice*
- Change Request (CR) Process

*EIA-649-B, Configuration Management Standard

Configuration Management of IOC CDRs

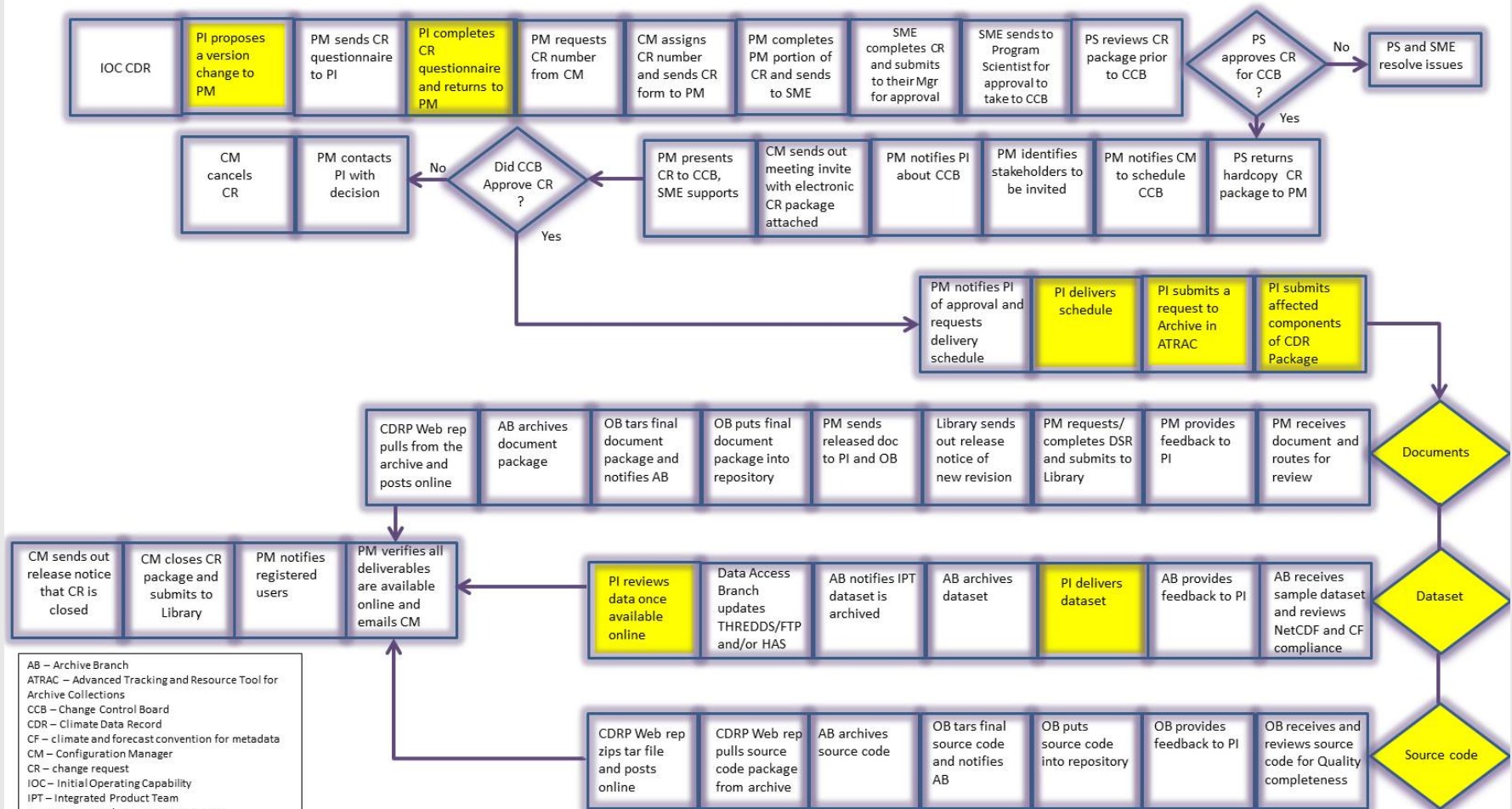


Configuration control is necessary for scientific defensibility

Change Request Process

Climate Data Record Change Request Process Flow

CDRP-DIA-0408
Rev 2 07/13/15



AB – Archive Branch
 ATRAC – Advanced Tracking and Resource Tool for Archive Collections
 CCB – Change Control Board
 CDR – Climate Data Record
 CF – climate and forecast convention for metadata
 CM – Configuration Manager
 CR – change request
 IOC – Initial Operating Capability
 IPT – Integrated Product Team
 NetCDF – network Common Data Form
 OB – Operations Branch
 PI – Principal Investigator
 PM – Project Manager
 PS – Program Scientist
 SME – Subject Matter Expert

- PI responsibility

1. Change Request Questionnaire

- The Change Request process begins when the PI proposes a change to any item in the CDR package:

- Documentation
- Software
- Dataset

- The PI completes the CR Questionnaire

CDR _____ SME _____
Current Version _____ New Version _____ PM _____

CDR Change Request (CR) Questionnaire

(Once completed, this Checklist is attached to the CR)	
1	What type of change is being requested? (check one)
1a	<input type="checkbox"/> Enhancement [higher accuracy, lower uncertainty, improved CPU/Storage/ Processing time economy, improved error detection/control/ handling/reporting, improved automation]
1b	<input type="checkbox"/> Corrective [bug fix affecting data, non-conformance to a requirement, etc]
2	Which will this change affect? (check all that apply)
2a	<input type="checkbox"/> Scientific quality (dataset)
2b	<input type="checkbox"/> Technical/Engineering quality (dataset production capability)
2c	<input type="checkbox"/> Documentation
	<input type="checkbox"/> C-ATBD <input type="checkbox"/> Flow Chart <input type="checkbox"/> Maturity Matrix <input type="checkbox"/> Other
4	How will this change affect the life-cycle maintenance of the code (if code is being changed)?
5	What is the driver (requirement) behind this change?
6	Is this change driven by a current user requirement? <input type="checkbox"/> Yes <input type="checkbox"/> No
6a	If so, specify the requirement
7	Is this requirement new or something not performed originally? (overlooked requirement) <input type="checkbox"/> Yes <input type="checkbox"/> No
8	What exactly will you change? (Attach this checklist to the CR form)
9	Will any of the following need to be updated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Source code <input type="checkbox"/> Security Review <input type="checkbox"/> README <input type="checkbox"/> Other
10	What areas of the Maturity Matrix will be improved?
11	If this is a new version, what validation and verification has been done?
12	What tools or processes can you pass along for independent V&V?
13	What are the resources required to plan and complete the proposed change? <input type="checkbox"/> Cost <input type="checkbox"/> Time <input type="checkbox"/> Labor & skills <input type="checkbox"/> Software <input type="checkbox"/> Equipment & tools <input type="checkbox"/> Other
14	How will the change improve end user application?

CDRP-FORM-0248 Rev 2
11/03/2014

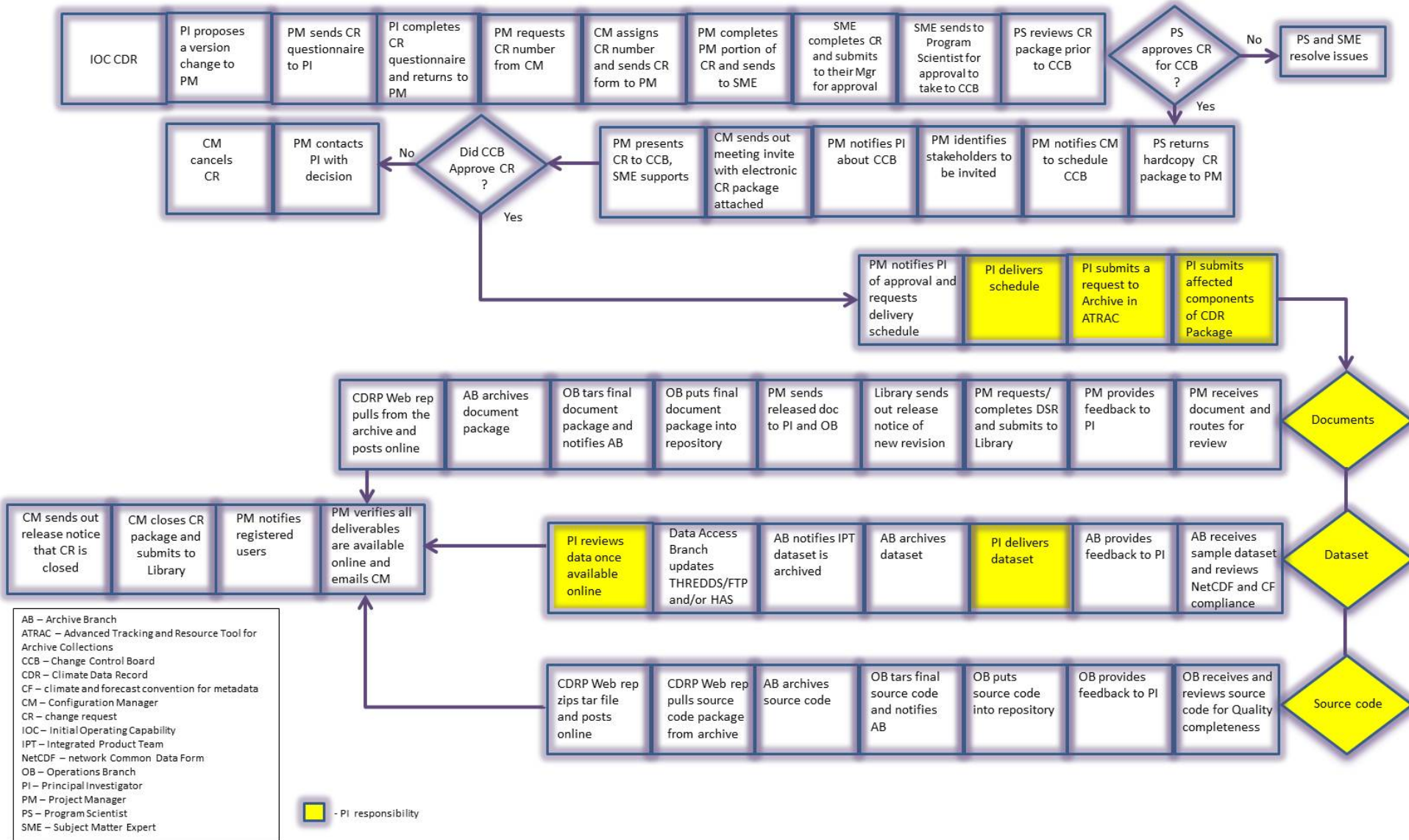
2. Change Request Form

CHANGE REQUEST (CR)				CR No.- CR Date	
1 CI IDENTIFIER: Choose an item.	2 CLASS <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> Fast Track		3 PRIORITY <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High		
4 CR ORIGINATOR:	5 CHANGE TYPE: <input type="checkbox"/> Permanent <input type="checkbox"/> Variance		6 CATEGORY: Choose an item.		
7 CI TYPE (select only one) <input type="checkbox"/> Software CI <input type="checkbox"/> Documentation CI (ex: Requirements, CONOPS, MOUs, SLAs)					
7a IF SOFTWARE CI:		Current Version		New Version	
7b IF DOCUMENTATION CI:		Current Revision		New Revision	
8. CR TITLE:					
9 DESCRIPTION OF CHANGE: (what)					
10 JUSTIFICATION FOR CHANGE: (why)					
11 DESCRIBE ALTERNATE OPTIONS:					
12 CR CHECKLIST INCLUDED? <input type="checkbox"/> YES <input type="checkbox"/> N/A		12a LIST ANY OTHER ATTACHMENTS:			
13 SUBJECT MATTER EXPERT (SME):		13a BRANCH	13b DIVISION	13c PROGRAM/ PROJECT	
14 APPROVING MANAGER: (printed/typed)		14a APPROVING MANAGER SIGNATURE: (signed)			
15 PROGRAM SCIENTIST CONCURRED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		15a COMMENTS:			
16 AFFECTED ITEMS		ITEM ID	Current Rev	New Rev	N/A-Not Applicable
16a Maturity Matrix		CDRP-MM-			
16b C-ATBD		CDRP-ATBD-			
16c Submission Agreement		AB-SA-			
16d Data Flow Diagram		CDRP-DIA-			
16e Version Description Document (VDD)		CDRP-VDD-			
16f Flyer		CDRP-FLY-			
16g Other document(s):					
17 IDENTIFY ANY OTHER RELATED CRs:		17a COMMENTS:			
Schedule					
18 EXPLAIN ANY IMPACTS TO SCHEDULE IF CHANGE IS/IS NOT APPROVED					
19 EXPECTED START DATE:		19a EXPECTED COMPLETION DATE:			
20 APPX LABOR HOURS:		20a COMMENTS:			
Acquisition/Procurement					
21 PROCUREMENT REQUIRED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> UNKNOWN		21a PURCHASE COST (if known):			
22 FUNDING VEHICLE <input type="checkbox"/> GRANT <input type="checkbox"/> CONTRACT <input type="checkbox"/> BOP <input type="checkbox"/> IAA		22a VEHICLE ID#			
22b COMMENTS:					

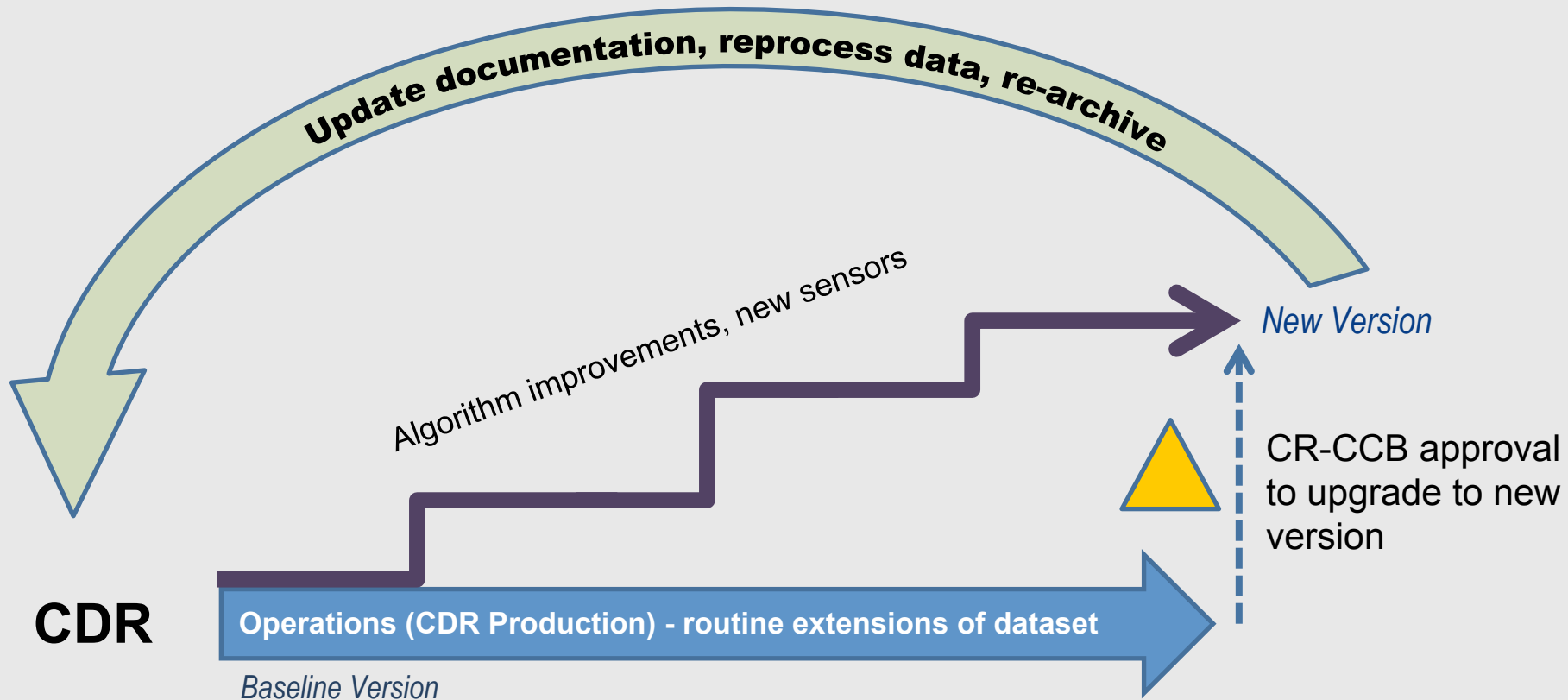
- The O&M Project Manager and NCEI Subject Matter Expert complete the CR Form
- Routed internally for review and presented to the CDR Program Change Control Board

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Configuration Management of IOC CDRs



Configuration control is necessary for scientific defensibility



Summary

- The IOC Phase is designed to be routine, sustained and systematic. Deliver updates to extend your dataset.
- Preliminary ICDR data to grow the user base.
- It's understood improvements/changes occur, Program approval is required to baseline a new version as operational and the Program will work with you to accomplish that.
- The Change Request process is extensive and requires ample amount of internal/external resources to complete. No more than once every 3 years, unless an error is discovered.
- The Program is focused on use-inspired operational, consistent, long-term CDRs. Not cutting edge research.



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