U.S. IOOS Requirements Process Briefing
for
IOOS AC Requirements PWG

Carl Gouldman | Director | August 6, 2020

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- **Foundational Documents and Requirements:** Where IOOS Requirements came from originally and how did we analyze those?

- **Present:** How are IOOS Requirements identified and managed today?

- **Guiding Principles:** As IOOS continues to grow and mature, what principles are important to retain for requirements management?

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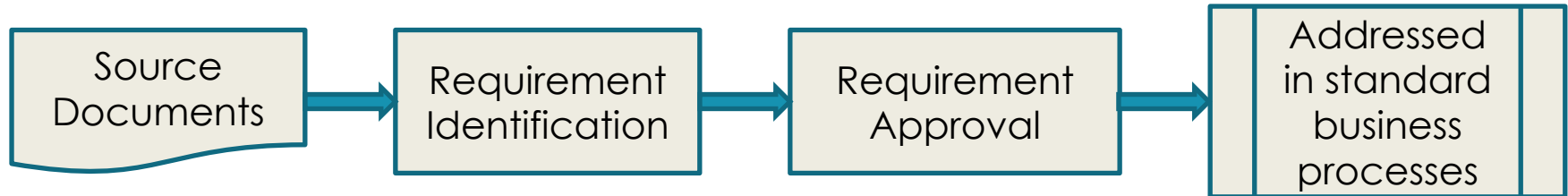# Foundational IOOS Documents
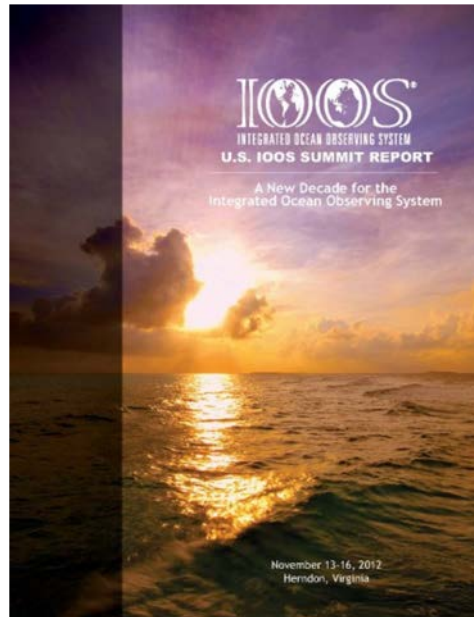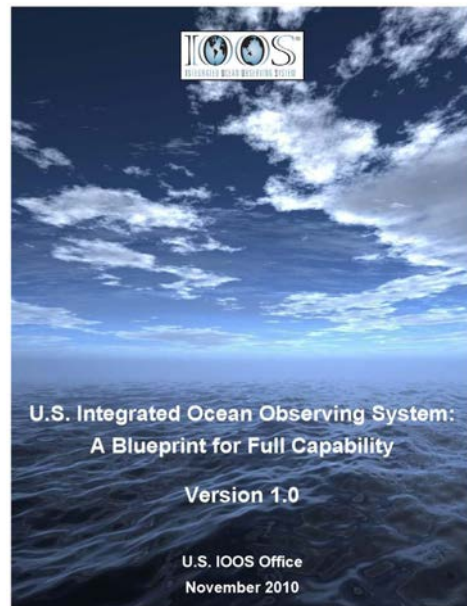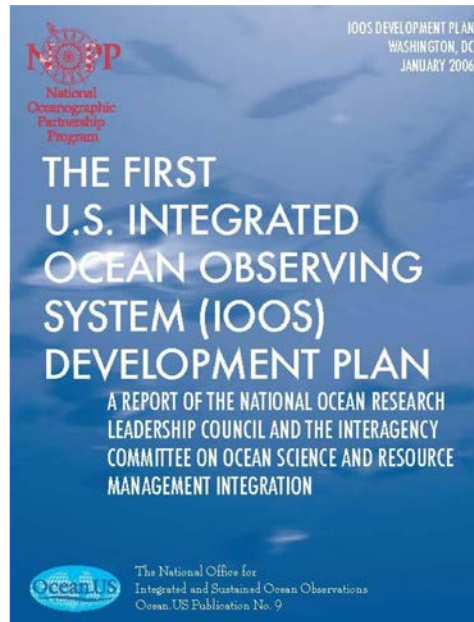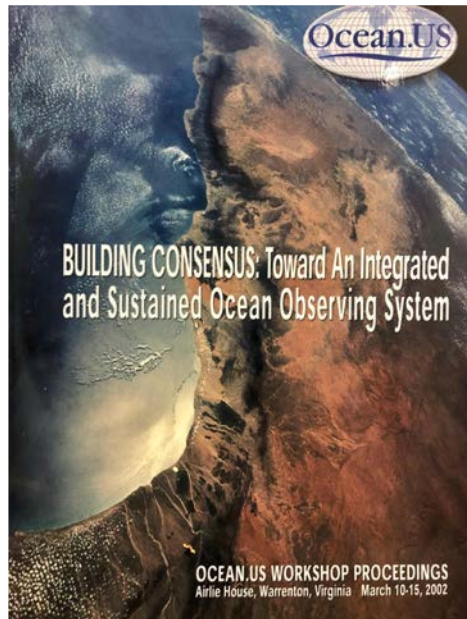
Foundation: Original IOOS Requirements

- Sources:
  - 2002 Airlie House Report
  - 2005 DMAC Implementation Plan
  - 2006 First U.S. IOOS Development Plan
  - 2009: ICOOS Act
  - 2010: U.S. IOOS Blueprint for Full Capability v1.0
  - 2010: Data Integration Framework
  - 2012 U.S. IOOS Summit Report
- Requirements focused on building the system

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Requirements Management

Source Documents → Requirement Identification → Requirement Approval → Addressed in standard business processes

Level	Sources	Approval	Addressed in
High	ICOOS Act Congress OMB NOAA/NOS IOOC	Director	Annual Planning Process
Medium	IOOS Strategic Plan Implementation Plans Regional Priorities	Director	Annual Planning Process
Low	IT user requirements Project plans	Division Chief	Software development Projects

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Annual Planning Cycle - Requirements Assessment and Integration

Strategic Document Review
- Assess
- Propose

Deputy & Div Chiefs Input
- Assess
- Propose

Director Planning Guidance
- Approve
- Approve

Draft Annual Guidance Memo

Division Review and Planning
- Assess
- Propose
- Approve

Assessment and input to the next year plan

Execution of Projects and Plans
- Assess
- Propose
- Approve

Final Detailed Annual Plans

Division Level Detailed Planning

Final Annual Guidance Memo

Requirements
- High Level
- Med Level
- Low Level

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IOOS Requirements Management framework

- Creative tension between regional individuality and need for national consistency
    - National level requirements driven by ongoing engagement with the 11 Regional Associations; their input is incorporated through annual planning cycle

- 11 Regions + National Office + IOOC = building a 'System'
    - ~$6.8M in 'national' funding and ~$39M in regional funding in FY19-20 and FY21 House mark.
    - 5 Year Cooperative Agreements – annual de-scope process and special award conditions = IOOS Office influence/direction

- For centralized sub-systems, like DMAC, the IOOS office has a leadership role to coordinate requirements toward national consistency.
    - We do this via meetings, listening, practicing, code sprints, compliance checkers, etc.

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Guiding Principles for Requirements Management

- The following guiding principles are key to successfully managing requirements regionally and nationally:

  - Requirements management recognizes Regional Association ability to set regional priorities.

  - Requirements management measurably improves decision-making in the IOOS Office.

  - Staff (both in National Office and RAs) are able to manage the workload required.

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Back Up Slides:

Details on system functions
2011-14
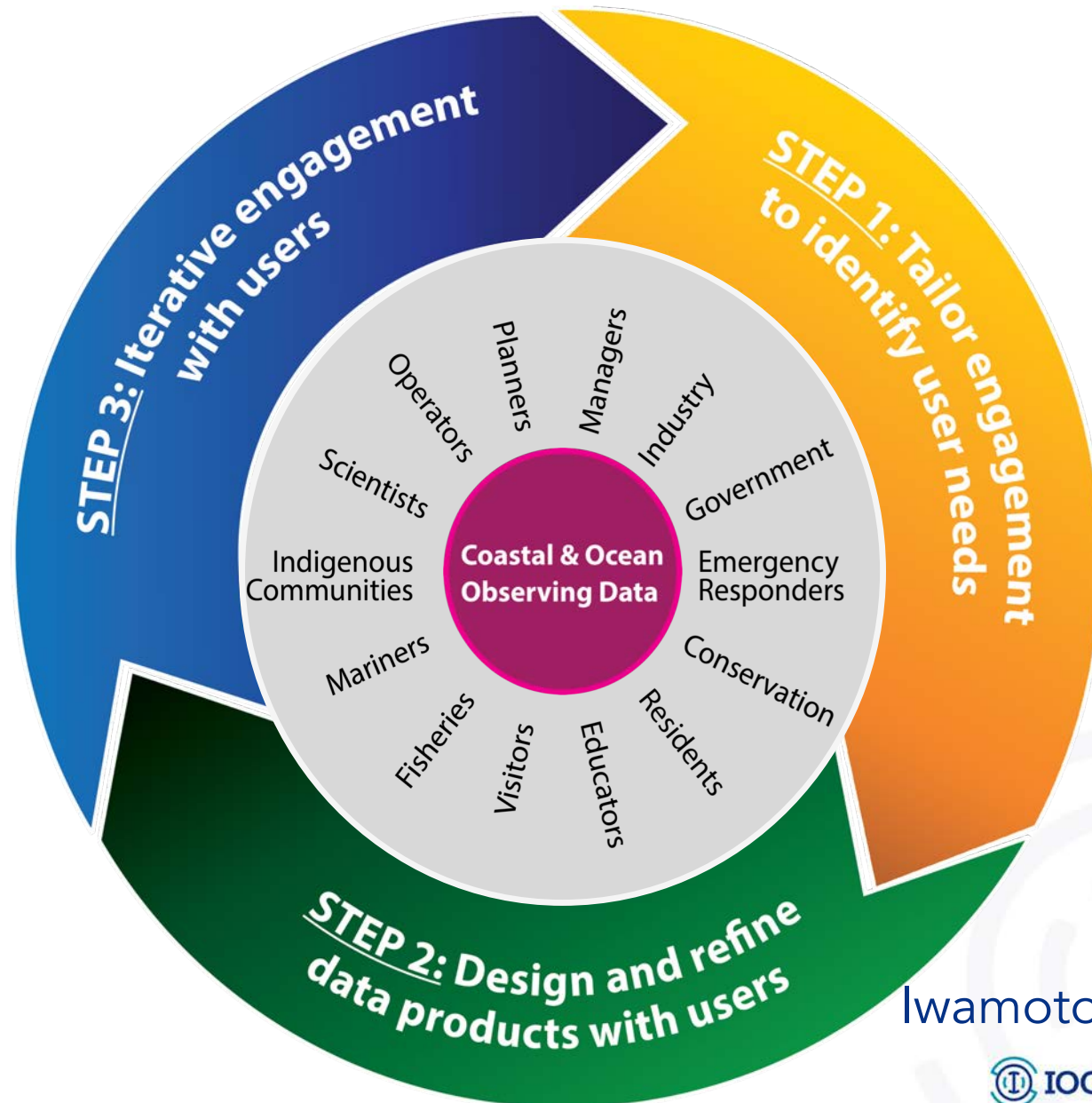
Iwamoto et al. 2019

U.S. IOOS Office Organization

Federal Oversight
Ocean Policy Committee
OST subcmte (EO 13840)

Interagency Ocean Observing Committee
17 Federal Agencies, NOAA lead federal agency

Global Ocean Observing System
via coordination with OAR/GOMO

U.S. IOOS Program Office
Director: Carl Gouldman
Deputy Director: Krisa Arzayus

IOOS Advisory Committee
Non-Federal

IOOS Association
Non-Federal

IOOS Regional Associations

Operations Division
Chief: Derrick Snowden

Regions, Budget, & Policy Division
Chief: Dave Easter

Physical Observations
Infrastructure Support (gliders, sensors, moorings, HF Radar))

Biological Observations
Marine Biodiversity Observing Network,
Animal Telemetry Network

Budget, Grants, & Contracts

Environmental Compliance

Modeling
Coastal and Ocean Modeling Testbed, Ocean Technology Transition

Data Management & Communications
Data catalog, data portals, products

Legislative Affairs & Communications

Regional Coordination

Data Standards
QARTOD, Regional Certification

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