### 2C.01 Overview of NCEI’s Emerging Mission Data Management System and its Components

**Kenneth Casey (NESDIS NCEI)**

Since its formation as the merger of the three former NOAA National Data Centers, NCEI has been working to modernize, consolidate, and optimize its data stewardship systems through a series of related efforts like the OneStop, Common Access, and Common Ingest projects. Initially these efforts were coordinated at only the highest level, but more recently NCEI has documented a cohesive vision for its future systems known as the Mission Data Management System (MDMS). Working with its Technical Roadmap team and key stakeholders across NCEI and NOAA, the emerging MDMS is built around the idea of loosely-coupled components that communicate via standards at each of the interfaces. This approach provides several key benefits such as enabling the components to be developed on different schedules and with different teams, supporting easier migration and updates of individual components without breaking the whole system, and enabling an open data framework where the components can be used to support multiple workflows for multiple users. This talk will provide an overview of the system and introduce each of the components to be detailed by the other presentations in the session. Feedback on each of the components will be sought from the wider NOAA data management community.

### 2C.02 Common Ingest: How this piece fits into NCEI’s Mission Data Management System and status of projects

**Steve Rutz (NESDIS NCEI)**  
Meg Tilton (NCEI), Linda Copley (NCEI), Lou Vasquez (NCEI), Richard A. Smith (NCEI), David Neufeld (NCEI), John Fauerbach (NCEI), John Relph (NCEI), Jon Burroughs (NCEI)

Since its formation, the National Centers for Environmental Information (NCEI) has used disparate, legacy systems spread across several NESDIS networks to fulfill its data-management functions. To modernize, consolidate, and optimize these functions, NCEI embraced Common Ingest as the functional piece that ingests data into its Archive. In this presentation to the NOAA environmental data management community, we will describe Common Ingest (its architecture and NCEI’s vision for it), NCEI’s projects to migrate data from legacy ingest systems to Common Ingest, and a pilot project where data created at NCEI-Boulder are ingested into the Archive with Common Ingest deployed at NCEI-Asheville.

### 2C.03 Inventory Manager and Granule Services

**Evan McQuinn (NESDIS NCEI)**  
David Fischman

National Centers for Environmental Information (NCEI) is migrating toward an enterprise solution for managing, archiving, storing, discovering, and delivering billions of files. A key component of the enterprise solution is storing the granule metadata and other file level information in a single system. This component will be the connector between ingest and discovery. The necessary features for constructing a granule service include storing billions of records and serving as the canonical source of record. While this Inventory Manager will serve as the canonical source of granule-level metadata, it will not manage the controlled vocabulary terms provided to it. For example, it will not manage GCMD or other keyword lists, and instead relies on external services for managing those terms. In addition to storing the billions of records, it will contain a workflow platform service so subject matter experts can incorporate their specific scripts designed to gather additional information and enrich the stored information. Repeatable, streaming processes will support various outputs, web services, version retention, and re-processing.

### 2C.04 Access Services and Order Fulfillment

**Phil Cogbill (NESDIS NCEI)**  
Rich Baldwin, Brian May
The Common Access system is the services architecture based evolution of the Climate Data Online system. The platform consolidates historical and desperate access/order fulfillment systems across NCEI. Common Access provides tailored searching and sub-setting functions for temporal and spatial attributes using ElasticSearch. This allows land, marine, and satellite observations to be ordered based on a list of variables, stations, times, locations (counties, cities, countries, states, hydrologic units, climate regions or divisions, agriculture regions, etc.) from disk, tape, database, or cloud. Specialized order fulfillment provides netcdf, pdf, or csv output for these tailored attributes. Certified pdf output suitable for litigation is an additional feature of the integrated system.

Access and order fulfillment is a core function of the Mission Data Management System. There are connection points to other MDMS components, again following a services based architecture. Each component of MDMS continues to mature and with this progression comes tighter integration and efficiencies as expected of any good enterprise system. Status, lessons learned and project targets will be discussed.

2C.05 Status of NCEI Archival Storage and Other Storage Services

Nancy Ritchey (NESDIS NCEI)

Since its formation as the merger of the three former NOAA National Data Centers, NCEI has been working to modernize, consolidate, and optimize its data stewardship systems through a series of related efforts like the OneStop, Common Access, and Common Ingest projects. Initially these efforts were coordinated at only the highest level, but more recently NCEI has documented a cohesive vision for its future systems known as the Mission Data Management System (MDMS). This presentation will provide an overview of the Storage Systems supporting data archival and access and it will speculate on a future vision.

2C.06 OneStop User Interface and Search API (Version 2)

David Neufeld (NESDIS NCEI/OneStop Project)

Arianna Jakositz, Evan McQuinn, Zeb Delk. Elliott Richerson,

The OneStop search application was public release onto the data.noaa.gov domain was announced on Dec. 7th, 2017. The application relies on key metadata standards and content generated and provided by NCEI data managers and metadata content developers. In this session, we will cover enabling technologies, review current user interface capabilities, and highlight how custom user interfaces can be built using the OneStop search API. We will discuss opportunities to collaborate with us to develop your own custom portal viewers based on the search API. In addition, we will discuss how the OneStop API and user interface connect with other components of the Mission Data Management System.

2C.07 NOAA OneStop - CoMET: Collection Metadata Enterprise Tool

John Relph (NESDIS NCEI)

Martin Aubrey (NCEI), Rich Fozzard (NCEI), Philip Jones (NCEI), Matthew Yannetti (NCEI), Sonny Zinn (NCEI)

As part of the OneStop project, NCEI is building a metadata management web application: CoMET, the Collection Metadata Enterprise Tool. CoMET is intended to support NOAA and OneStop metadata best practice, in an effort to increase consistency and completeness of our collection metadata, and to reduce overall effort of creation and maintenance of those metadata. We will review our progress in building and deploying CoMET, and solicit feedback from the community.