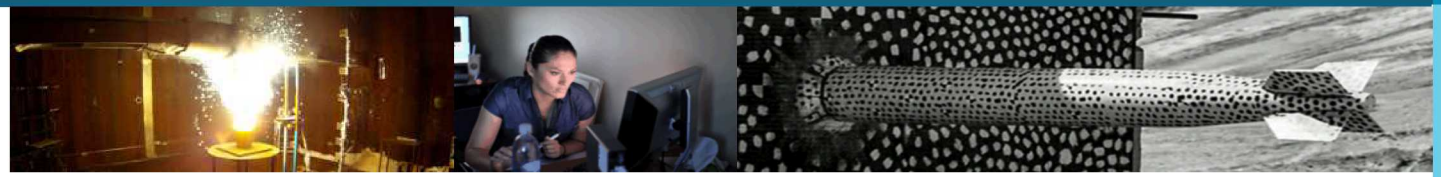
SAND2020-4451PE

SFWD Telecommuting Series: A Cloud-Based IT System for a Generic Nuclear Waste Management Program



PRESENTED BY

Evaristo J. (Tito) Bonano, Ph.D.
Senior Manager, Nuclear Energy Fuel Cycle Program 8840
Sandia National Laboratories
April 29, 2020

Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

NWM Cloud Project Scope

- Create a cloud environment to support future Nuclear Waste Management projects
- Deliver a cloud-enabled IT environment that replaces obsolete hardware and software where possible and modernizes it wherever it is not replaceable
- Develop replacement applications or procure COTS applications required to fulfill DOE and NRC Nuclear Waste Management regulations and requirements (e.g., for corrective action program, document control and data management, federal records, LSN…)

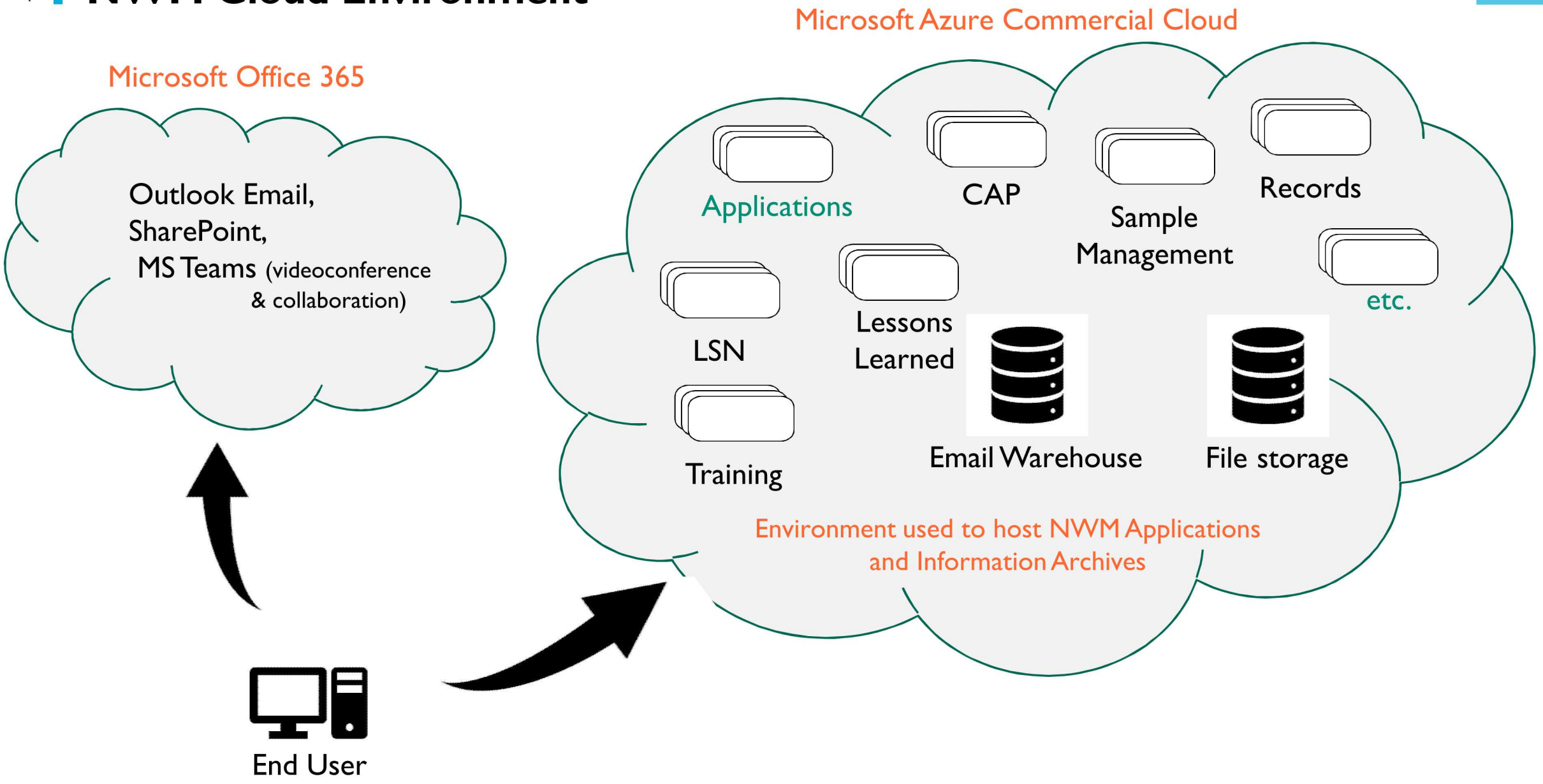
Project Requirements in Pursuit of FedRAMP-Certified Cloud Services

- Need program-wide collaboration with the ability to communicate and share easily between multiple remote locations and parties
- Ensured IT and Security compliance and standardization, reduced risk, and required assurance
- Reduced resources/time to set up and maintain the Project infrastructure
- Positive influence on:
  - Accessibility
  - Agility
  - Scalability
  - Accelerated decision making
  - Innovation
  - Productivity
- Cloud Services proposal in-line with the Federal Government Cloud-First strategy

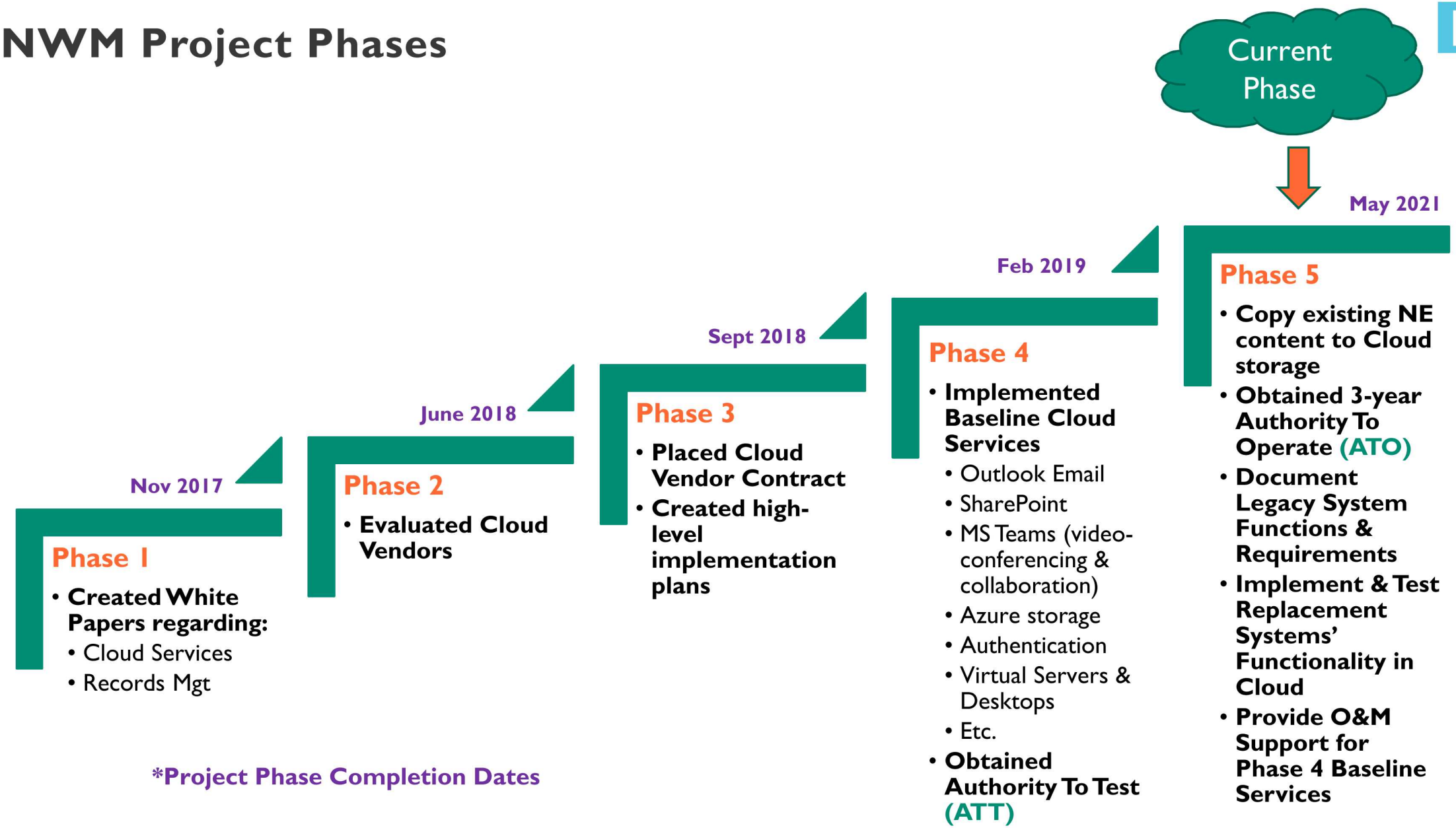
FedRAMP

Per an OMB memorandum, any cloud services that hold federal data must be FedRAMP authorized.
The Federal Risk and Authorization Management Program (FedRAMP) is a government-wide program that provides a standardized approach to security assessment, authorization, and continuous monitoring for cloud products and services.
FedRAMP enables Agencies to rapidly adapt from old, insecure legacy IT to mission-enabling, secure, and cost effective cloud-based IT.
https://www.fedramp.gov/about/
General Services Administration

NWM Cloud Environment



NWM Project Phases



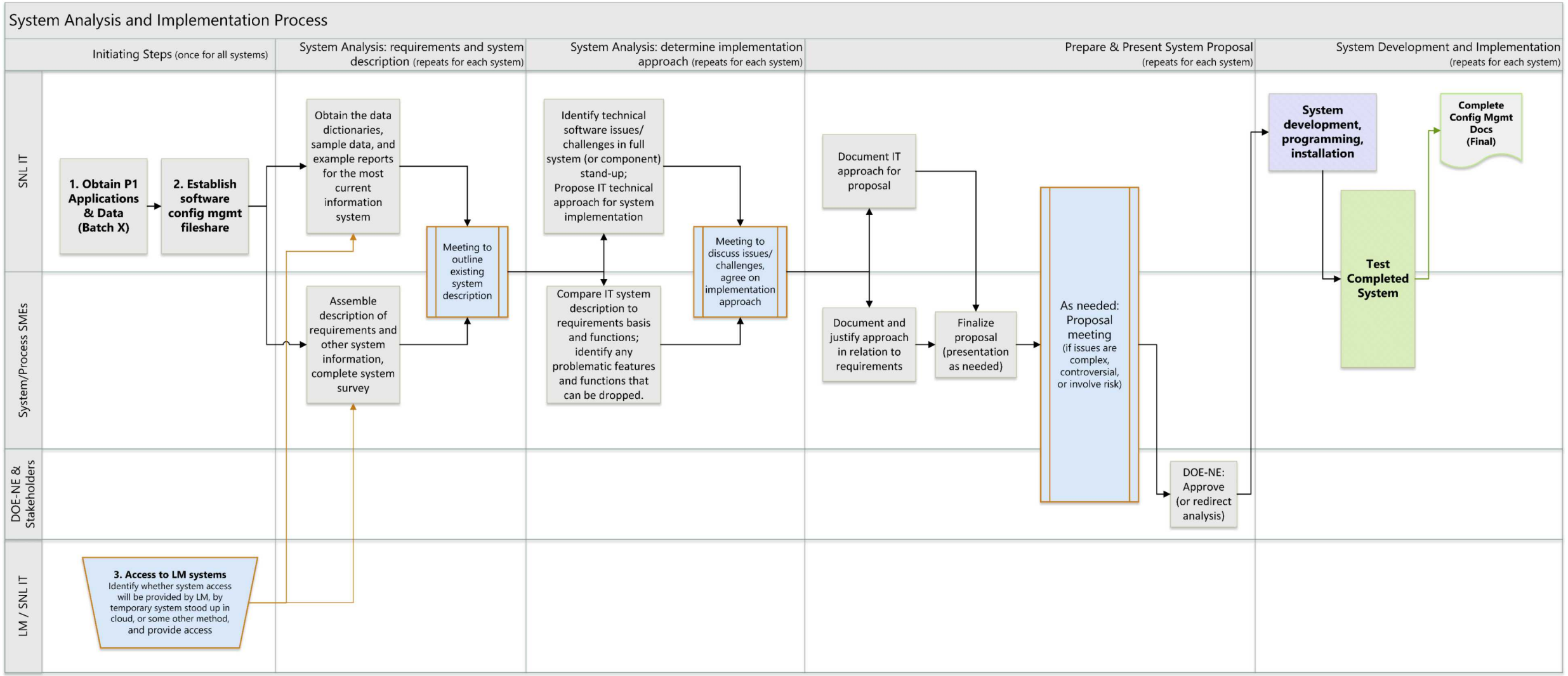
*Project Phase Completion Dates

Identification of Systems to be implemented in the NWM Cloud

- The applications and systems to be developed in the NWM Cloud include the following:

- Software Configuration Management
- Corrective Action Program
- Technical Library system (based on TIC/TechLib)
- Sample Management (based on CSITS)
- Training Management
- Records Management (based on RDMS/RISweb)
- Data Management (based on TDMS suite)
- Requirements Management (based on RTN/DOORS)
- Forms management
- Document Control (based on CDIS)
- Inputs Management (based on DIRS)
- Lessons Learned and Operating Experience databases
- File storage archive of legacy information
- LSN capture, processing, and transmittal
- License Application & RAI response (based on LA database/RAIRS)
- NRC Hearing Process management (Contentions)
- Miscellaneous required systems formerly supported by Lotus Notes databases (e.g., Correspondence Control, ES&H databases)

IT Systems Analysis, Development, and Implementation Process



FY20/21 High-Level PICS: ne Milestones

Target Completion Dates	Milestone/Deliverable
12/2019	Legacy Data Upload to Cloud Storage ~70TB of content, ~477M files/documents (Complete)
02/2020	DOE CIO Approval to Operate in the NWM Cloud Environment (Complete) 3 year Authority to Operate (ATO) replaces the Authority to Test (ATT)
03/2020	High-level Analysis of all P1 Legacy Systems (Complete)
05/2021	Implementation of Legacy Applications/Functionality
TBD	Create an Operations & Management plan for all P1 Systems & Baseline Cloud Services