



U.S. AIR FORCE



Providing the Warfighters' Edge

Non-DoD Military Aircraft (NDMA) Airworthiness Accreditations Acquisition Insight Days June 2016

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AFLCMC/EZSA**



NDMA INDUSTRY DAY 18 Nov 15

Agenda



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Time	Event	POC
0800 – 0900	Registration	All
0900 – 0910	Administrative Details	Mr. Robert FitzHarris
0910 – 0920	Welcome – SAF/AQ Perspective	Dr. Camron Gorguinpour
0920 - 0930	Industry Day Goals	Mr. Jorge Gonzalez
0930 – 1030	USAF Technical Airworthiness and NDMA Overview	Mr. Robert FitzHarris
1030 – 1045	Break	
1045 – 1130	Cooperative Research and Development Agreements (CRADA)	Mr. Keith Quinn
1130 – 1200	Open Forum	NDMA Team
1200 – 1230	Lunch	All
1230 – 1700	One-on-One Sessions	NDMA Team



Industry Day Goals



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- **Industry receives:**
 - **Insight into USAF intent and planned NDMA process**
 - **Clarification on what the NDMA process will provide.....and what it won't...and why**
- **USAF receives:**
 - **Insight into potential markets**
 - **Scope the size of the effort**
 - **Increased understanding of perceived industry benefits**
 - **Innovative ideas from industry**
 - **Options WRT supporting roles industry could play in NDMA assessments**
 - **Proposed changes to process with supporting rationale**
 - **Feedback WRT alternative approaches**



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USAF Technical Airworthiness Overview

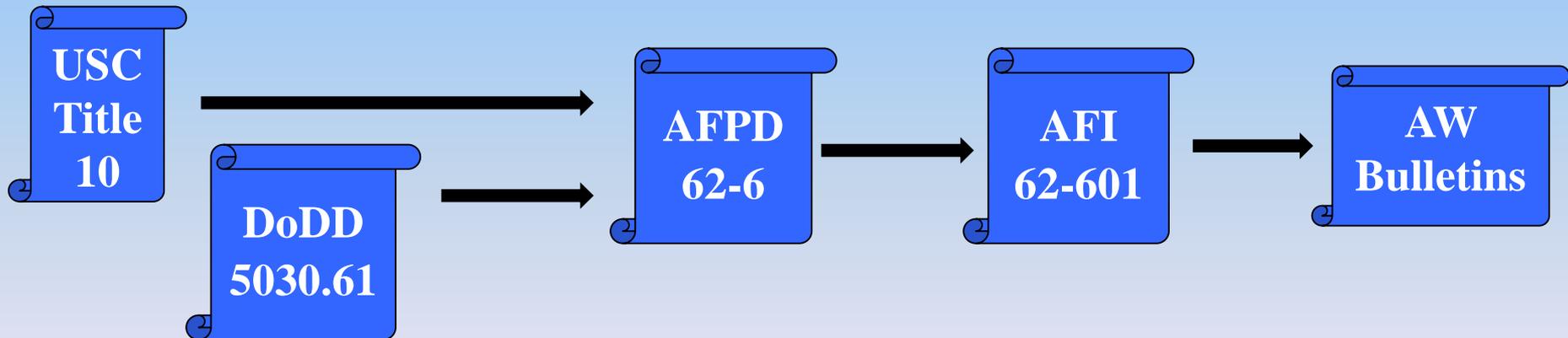


AW Policy



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- The Air Force is responsible for assuring the AW for all air systems owned, leased, operated, used, designed, or modified by organizational components of the USAF





AW Definitions



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- **Airworthiness (AW)**
 - The property of an air system configuration to safely attain, sustain, and complete flight in accordance with approved usage and limits
- **Technical AW Authority (TAA)**
 - The AF official authorized to define AW standards, approve the certification basis, issue findings of compliance, and issue flight authorizations
- **AW Assessment**
 - A technical evaluation of data against specific AW criteria and determination of residual risk.
 - An AW assessment is a critical step in the AW process but itself does not necessarily result in the issuance of an USAF flight authorization (Military Flight Release or Military Type Certification)



Ground Rules for USAF Technical AW

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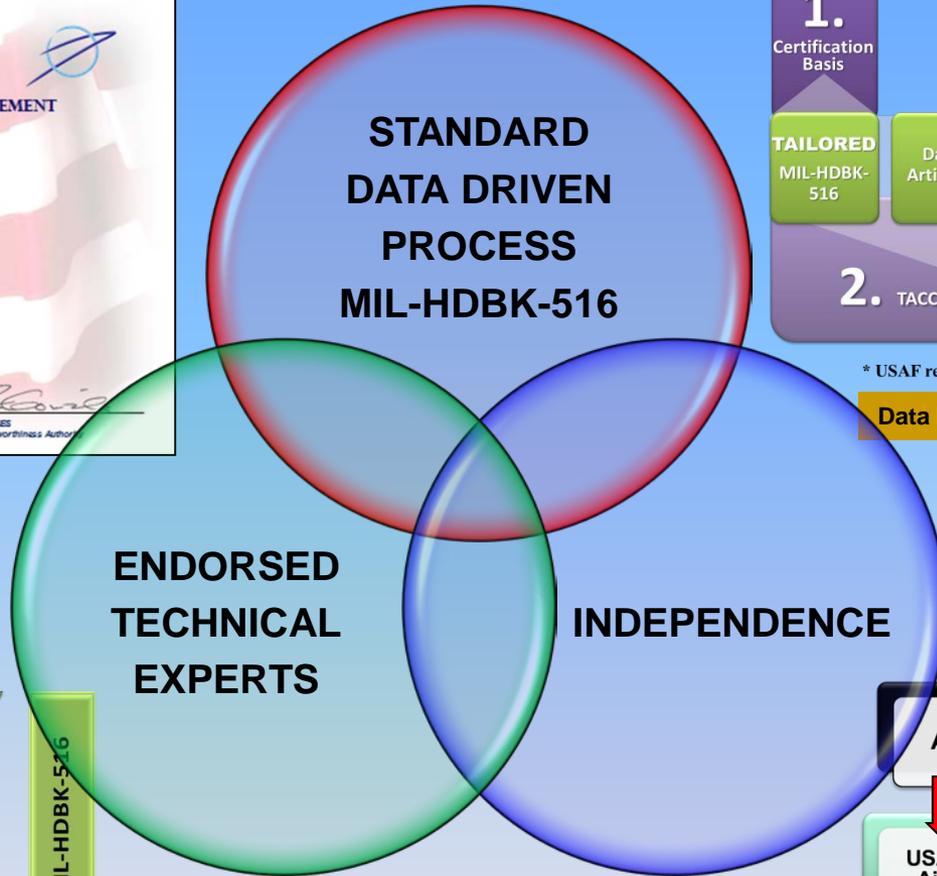


- **Assess only entire air systems**
 - **Modifications are assessed in their installed condition**
 - **Applicable to manned aircraft and mid-sized and large Unmanned Air Vehicles (UAVs)**
 - **Small UAVs are not assessed utilizing this process (nor are they included in the NDMA process)**
- **AF does not issue component design approvals**
 - **No Technical Standard Order (TSO) equivalent**
- **AF assesses against MIL-HDBK-516 (currently C version) including any applicable Change Notices**

USAF AW TENETS

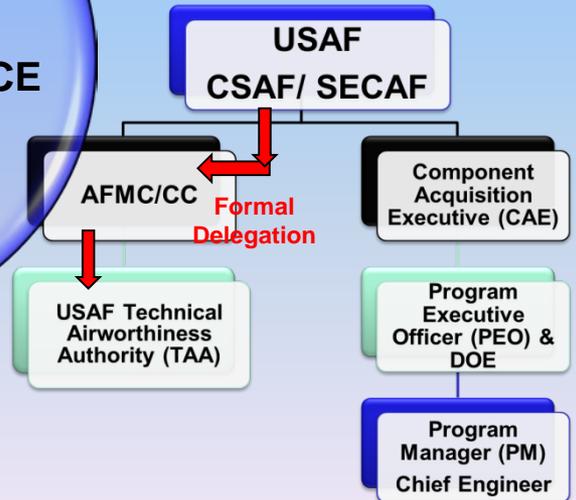
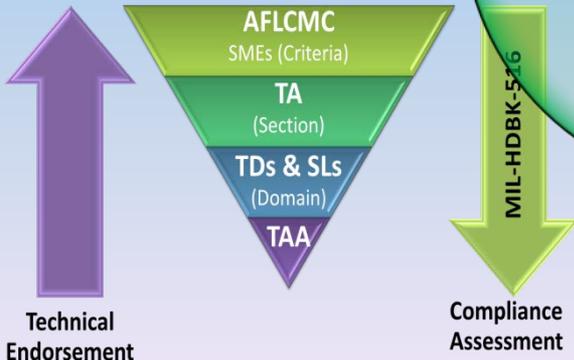


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* USAF required Criteria, Standards, and Methods of Compliance

Data Release is through the Program Office



Consistent with national/international & civil/military processes



Standard USAF AW Assessment Process and Products



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Flight Authorization

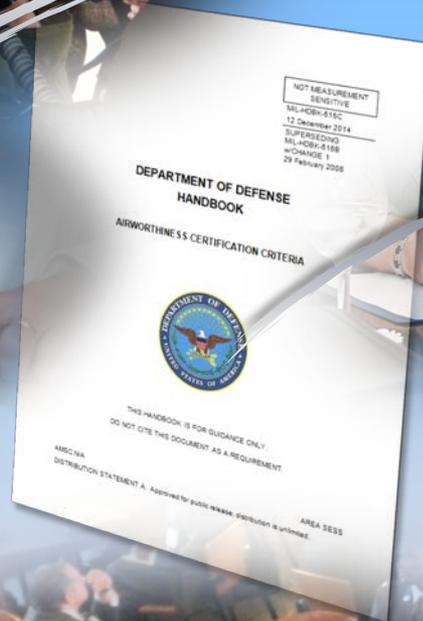
Certification Basis Development

Planning

Airworthiness Board Review

Compliance Assessment

Risk Identification & Acceptance





Standard USAF AW Assessment

SPO to TAA Relationship

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- Program manager in System Program Office (SPO) is responsible to implement and execute life-cycle AW program
 - Develops (with prime contractor) AW process inputs
 - AW Plan – How will the system be certified?
 - Certification Basis (CB) – What req'ts apply?
 - Compliance Report (CR) – Show compliance with CB?
 - Risk Identification and Acceptance
 - Assures continued AW throughout system life cycle
- USAF TAA & AW Board provide independent reviews
 - Determines technical compliance with MIL-HDBK-516
 - Identify hazards for non-compliance
 - Issues flight authorizations after risk acceptance



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NDMA OVERVIEW



So...what is a

Non-DoD Military Aircraft (NDMA)

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- **NDMA is an aircraft designed for military use that is not commissioned, owned, or operated by the Department of Defense (DoD) and is not part of the foreign military sales program**
 - SECAF Memo, 8 March 2016
- **These air systems may be under consideration by an industry collaborator for domestic or international sales**
- **May be offered via Direct Commercial Sales (DCS) to a foreign military customer**



NDMA USAF AW Assessment Process and Products



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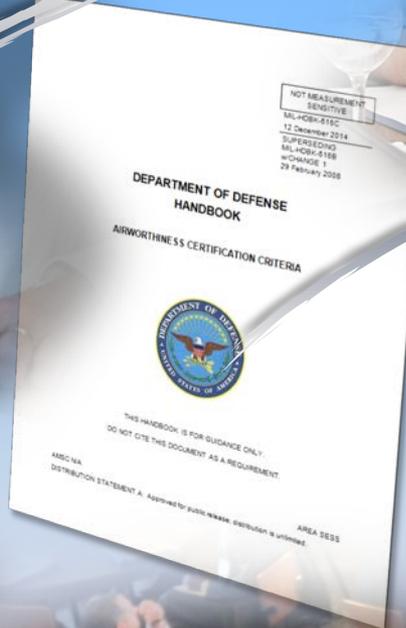
Accreditation Report



~~Accreditation Report
Flight Authorization~~

~~Assessment Certification~~
Basis Development

Planning



Airworthiness Board Review

~~Risk Identification & Acceptance~~

Compliance Assessment



NDMA USAF AW Assessment

NDMAO to TAA Relationship



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- **NDMA Office (NDMAO) is anticipated to be a “SPO-like” entity from an AW perspective**
 - Will develop, with the industry collaborator, all AW process inputs for AW assessment
 - Collaborator will be responsible to provide data and funds to enable:
 - Assessment Planning – Pre-Phase 1
 - Assessment Basis (AB) – Phase 1
 - Compliance Report (CR) – Phase 2
 - Risk Identification – Phase 2
- **USAF TAA & AW Board provide independent reviews**
 - Determines technical compliance with MIL-HDBK-516
 - Identify hazards for non-compliance
 - Issues USAF Accreditation Report



Accreditation Will Result in...



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- **An assessment basis**
 - Identifies the MIL-HDBK-516 criteria/standards/MOCs that are applicable to the aircraft or aircraft modification under review
- **A detailed review of design and verification artifacts**
 - Produces a compliance report that assesses the adequacy of artifacts for determining the AW of the system
- **An identification of risks**
 - Identifies risk associated with non-compliances to the assessment basis
- **An accreditation report**
 - Includes the AW Board findings, signed by the USAF TAA



Accreditation WILL NOT Result in...



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- Issuance of a USAF-issued Flight Authorization
 - Military Type Certificate (MTC) or Flight Release (MFR)
- Risk acceptance by USAF
- Determination of the mission effectiveness of the aircraft
- Evaluation of design compliance to any contract requirements
- Assessment of the information necessary to issue a Military Certificate of Airworthiness (MCA)
- Examination WRT the production facility capability or review of any manufacturing deficiencies that affect system delivery



Other USG Agency Involvement



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- **NDMA collaborator must apply/obtain through appropriate existing channels:**
 - **FAA flight authorizations (airworthiness certificates) for civil aircraft operations (e.g., NDMA) in appropriate categories**
 - **Access to or support from: Test Ranges, SEEK EAGLE Office, etc.**
- **The NDMAO will not generate any artifacts or sponsor/conduct testing**



Accreditation Phases



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- **Pre-Phase 1 – Application & Planning**
 - Entry: Collaborator-completed design-based questionnaire
 - Task: NDMAO scopes effort; Develop draft phase 1 CRADA & price
 - Exit: Draft CRADA sent to collaborator
- **Phase 1- Establish Assessment Basis**
 - Entry: Signed CRADA and 100% funding from collaborator
 - Task: Develop/Coordinate/Sign NDMA assessment basis; Price Phase 2 of CRADA
 - Exit: NDMA assessment basis & Phase 2 CRADA to collaborator
- **Phase 2 – Compliance Assessment and Accreditation**
 - Entry: Acceptance of updated or new CRADA; 30% collaborator funding
 - Task: Conduct compliance & risk identification using incremental funding to completion; AW Board review and TAA accreditation
 - Exit: USAF Accreditation Report



NDMA Process and Product



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USAF Accreditation Report

- Configuration Definition
- Assessment Basis
- Compliance Assessment
- Risk Identification
- Accreditation Statement

TAA-issued Accreditation Report
(Phase 2)

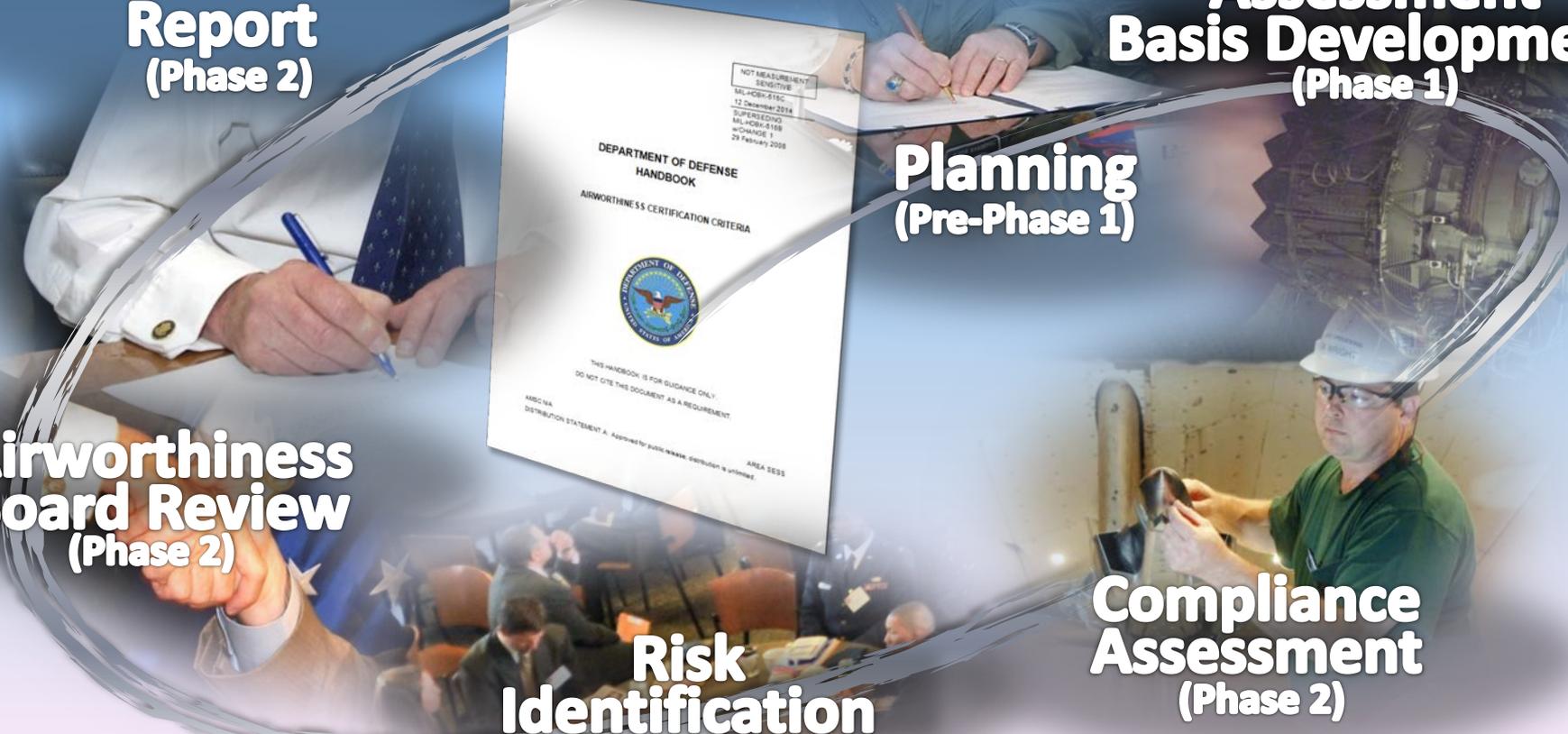
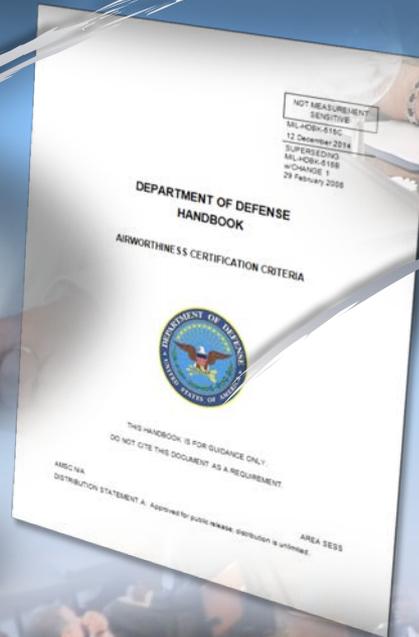
Assessment Basis Development
(Phase 1)

Planning
(Pre-Phase 1)

Airworthiness Board Review
(Phase 2)

Compliance Assessment
(Phase 2)

Risk Identification
(Phase 2)





Top-Level Implementation Schedule (Notional)



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- ✓ **USAF develops Draft CRADA for team review (wk. of 9 Nov)**
- ✓ **Industry Day (18 Nov)**
- ✓ **USAF releases Fed Biz Ops announcement soliciting CRADAs with NDMA manufacturers offering reimbursed AF support to meet their AW objectives (11 Mar)**
 - ✓ **Includes instructions on how to request participation**
 - ✓ **First come - First served basis**
 - ✓ **Pre-Phase 1 efforts begin 4 Apr**
- **Enter initial CRADA partnership with NDMA manufacturer(s), as appropriate (Jul - Aug 16)**
 - **Begin Phase 1 efforts**



Summary



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- **We hope that this briefing provided you with**
 - **Insights to the USAF's intent**
 - **An understanding of the planned NDMA AW accreditation process**
 - **A clear understanding of what the NDMA accreditation process provides...and what it doesn't provide**
- **The USAF will be providing an opportunity to industry to partner via CRADAs**
 - **Industry benefits by obtaining USAF accreditation**
 - **USG benefits by supporting the aerospace industry's RDT&E efforts**



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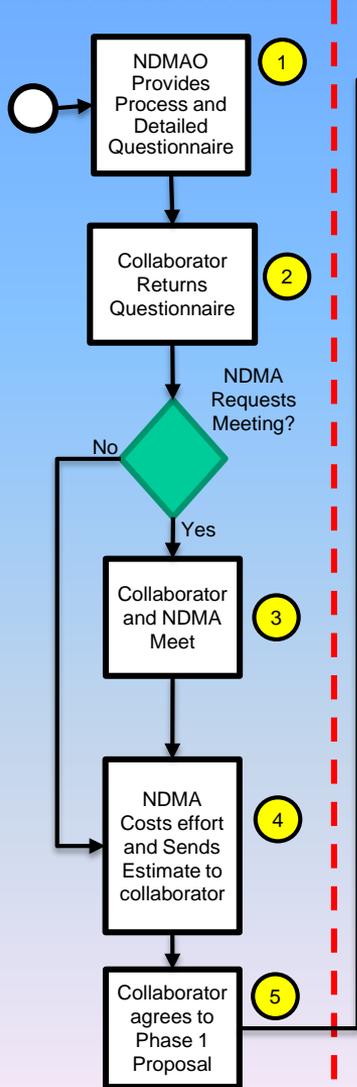
BACKUPS



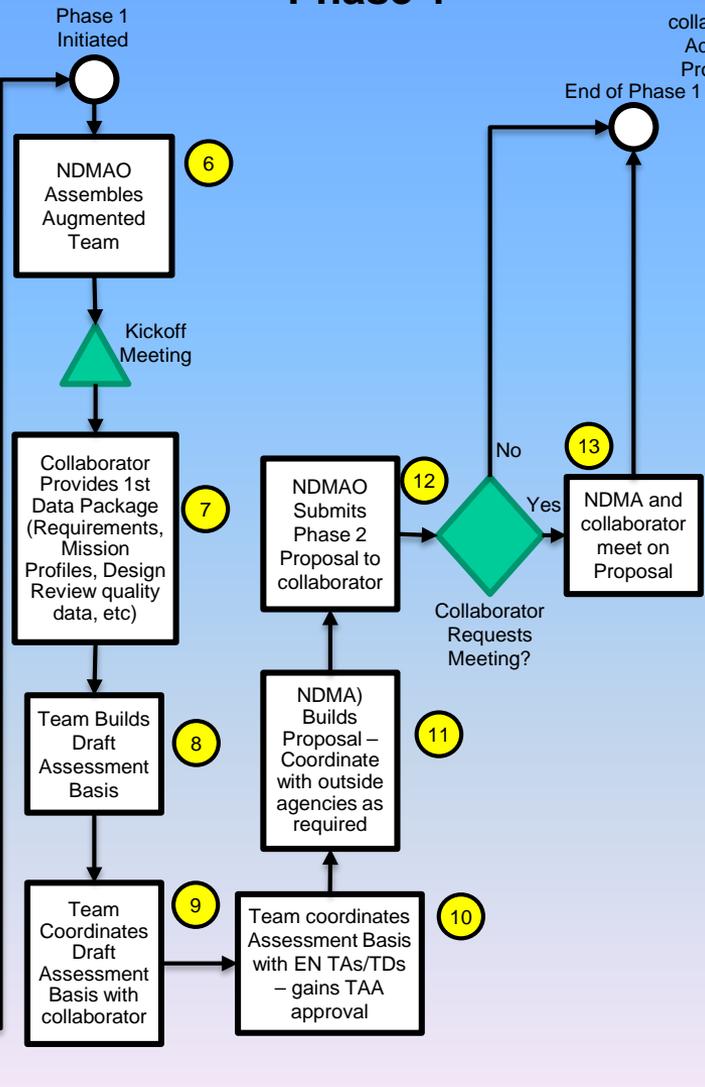
Process Flow

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Pre-Phase 1

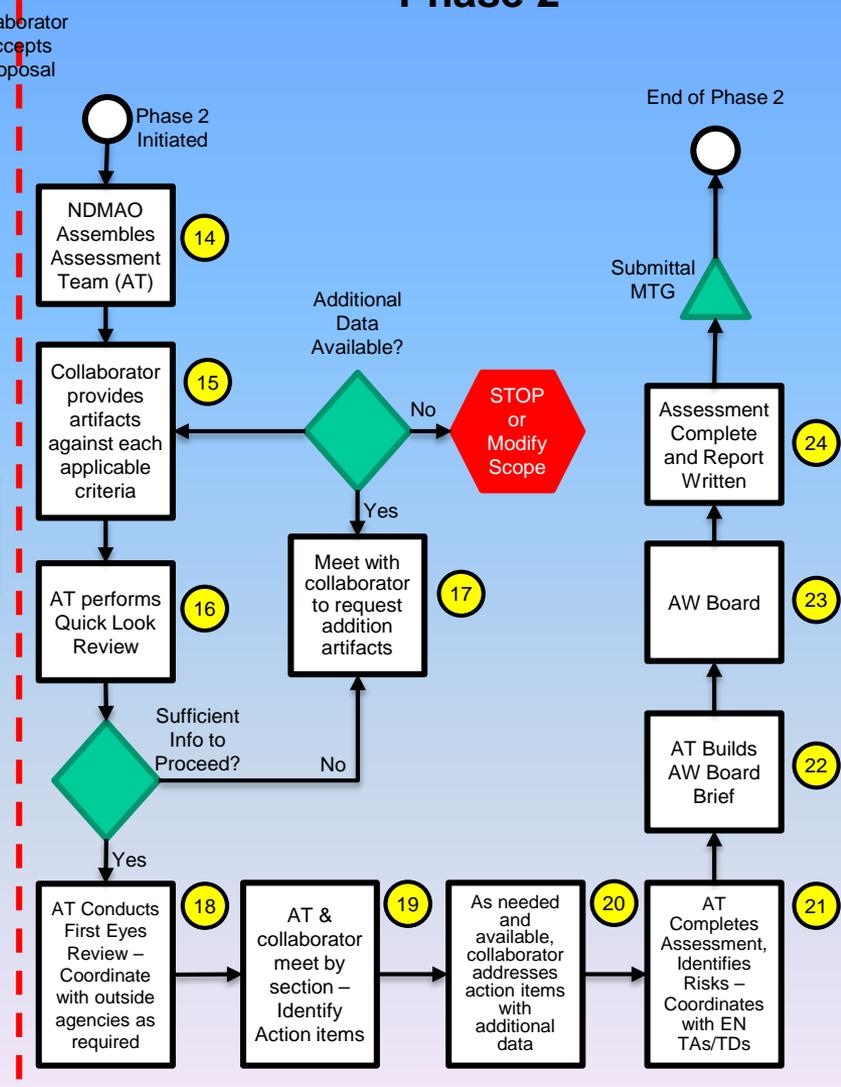


Phase 1



collaborator Accepts Proposal

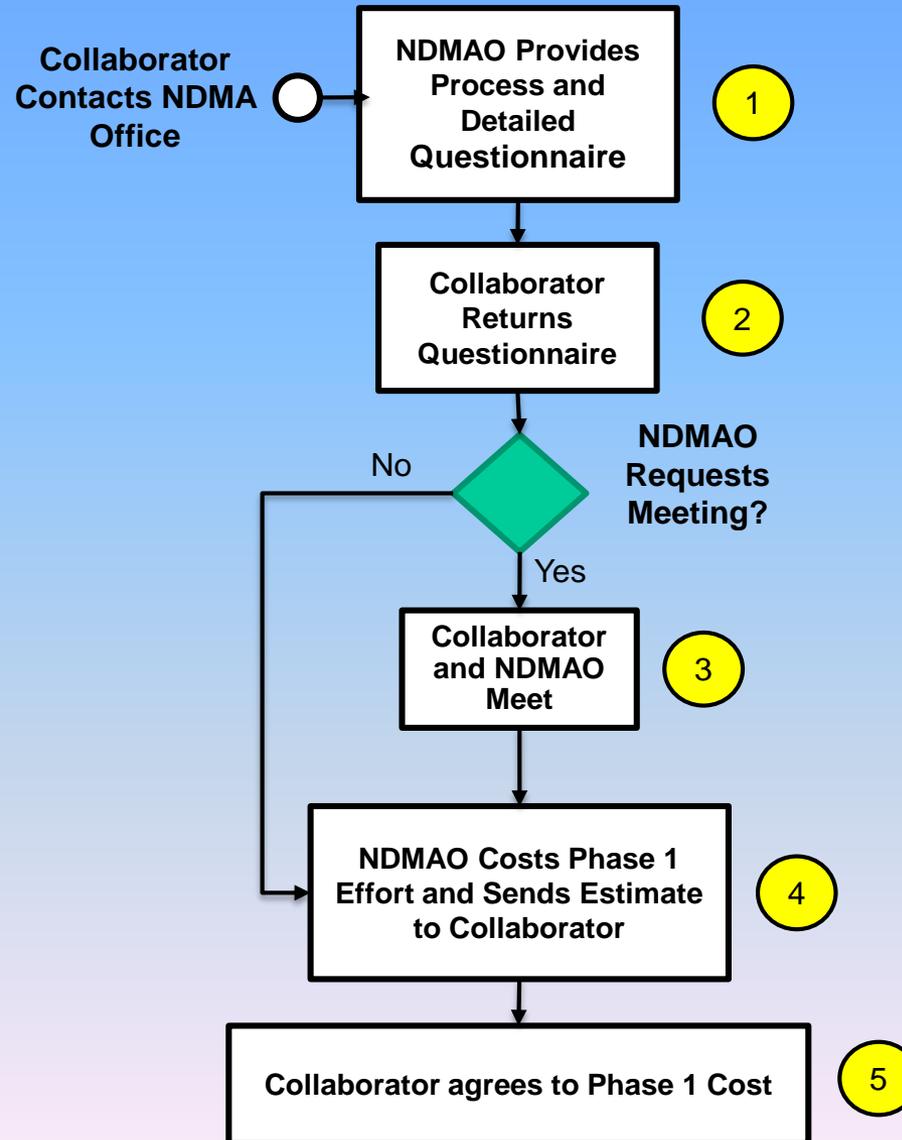
Phase 2





Pre-Phase 1 Application & Planning

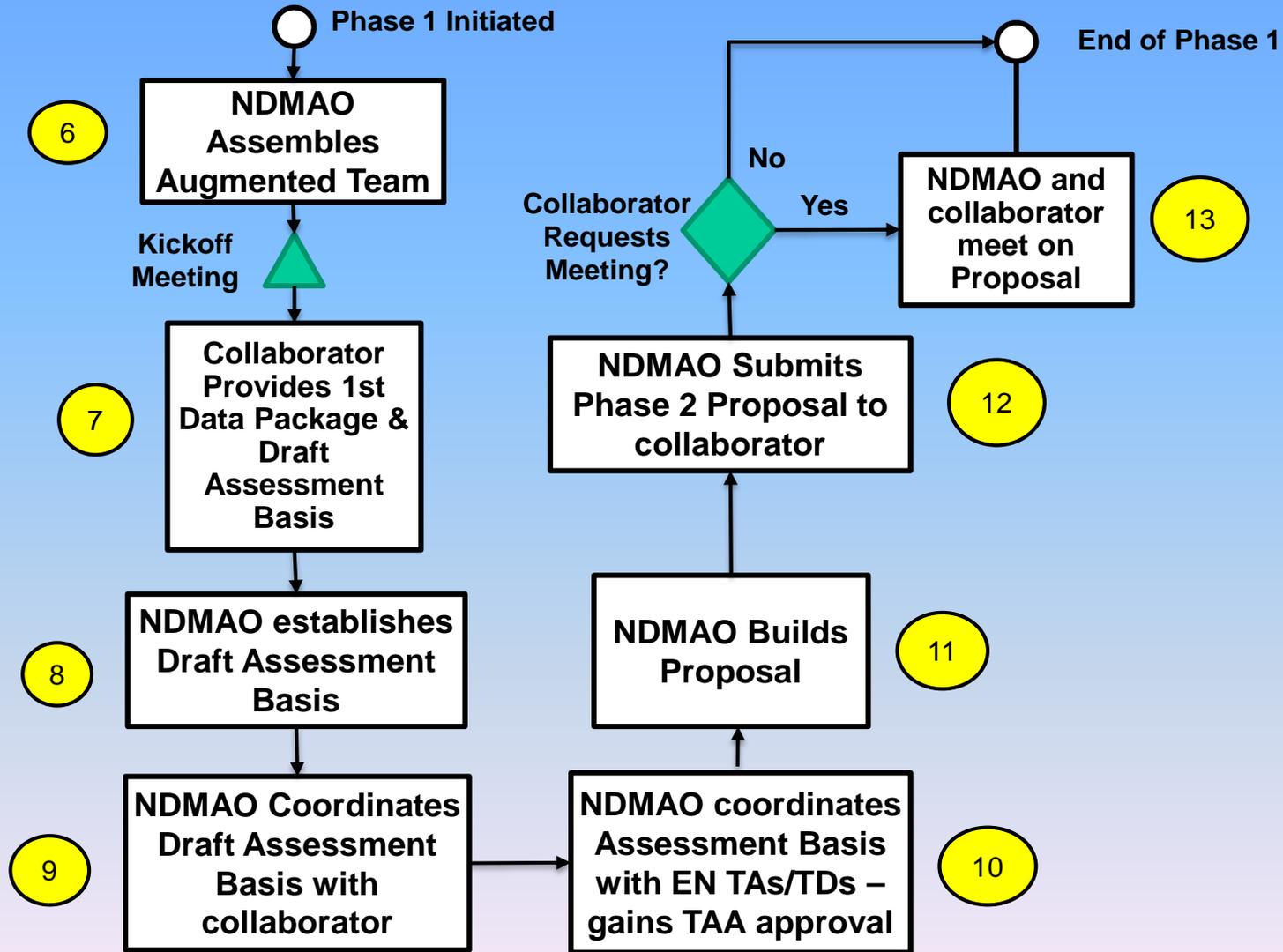
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Phase 1

Assessment Basis

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Phase 2

Assessment and Accreditation

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