



SMS SUMMIT 2023

ASSESSING FUNCTIONALITY

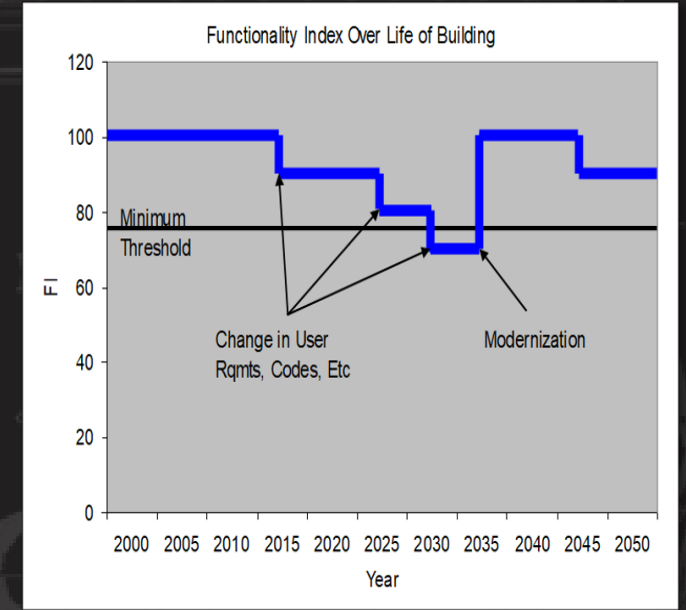
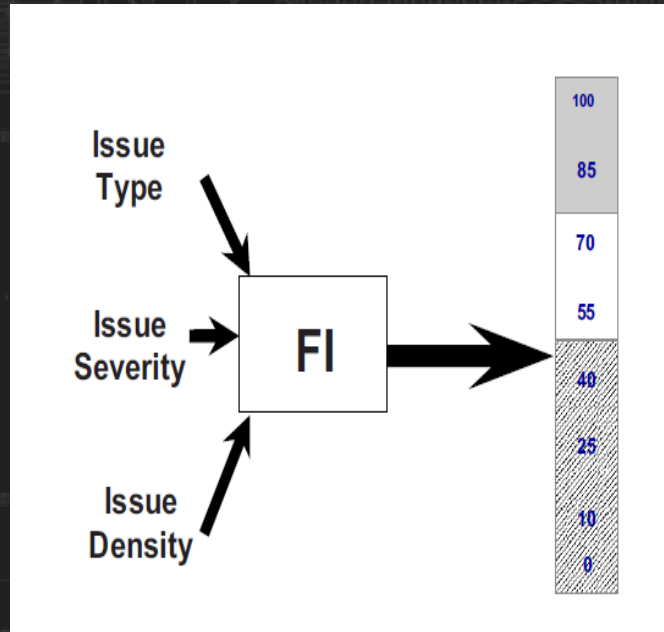
Policy/Management Track: Session 3B
Tuesday, Aug 8 – 3:00 – 3:50 PM



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Inventory

Condition

Functionality

FUNCTIONALITY ASSESSMENTS OVERVIEW



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FUNCTIONALITY ASSESSMENTS OVERVIEW

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What is Functionality?

- ❖ The functionality state relates to a managed object's suitability to function as intended and required for mission and is distinct from the physical condition state.
- ❖ A functional assessment provides a logical, scientific approach to quantifying the effects of changes in user requirements, codes, efficiency, and obsolescence.



Reciprocating Chiller



Gas Boiler

A building's HVAC system may have been well maintained over the years and currently in good condition (G-), but inefficient by today's standards.



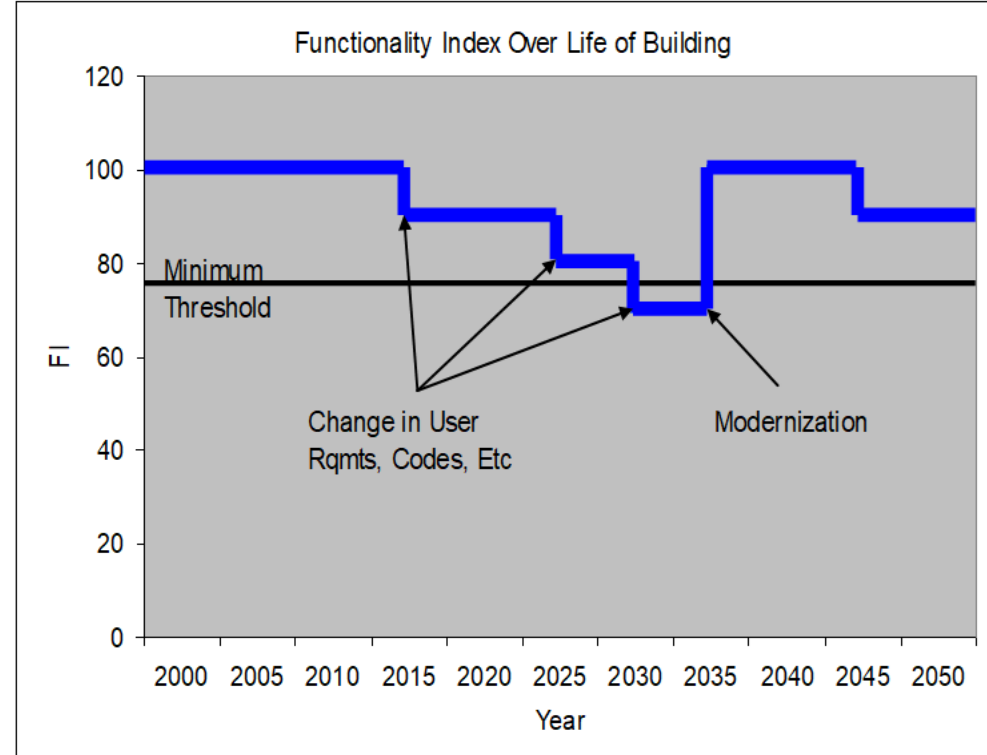
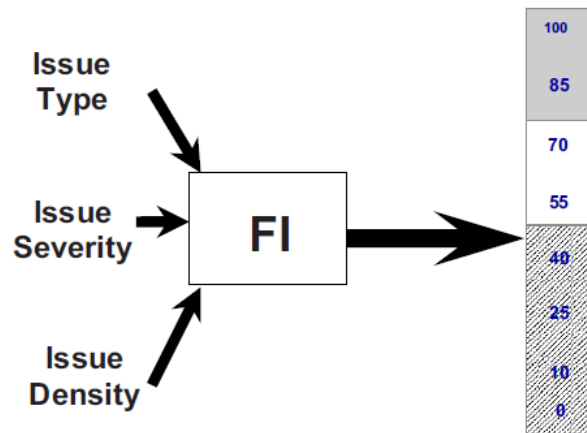


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FUNCTIONALITY ASSESSMENTS OVERVIEW



The Functionality Index



The Functionality State is improved through Facility Modernization Investments





FUNCTIONALITY ASSESSMENTS OVERVIEW

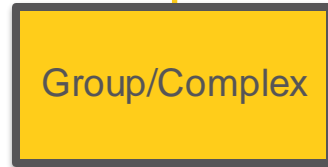


Assessment Target Types

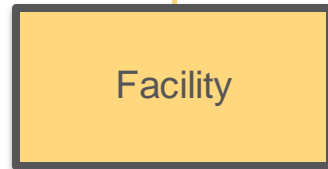
Functionality Questionnaires are associated with one of these Target Types



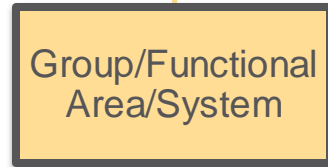
- ❖ The highest level of functionality assessment is most likely the site level. However, questions could be associated at installation and organization level



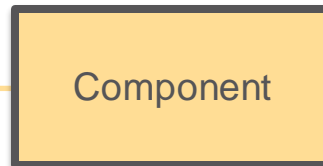
- ❖ These are groups of facilities



- ❖ Tier 1 Level in BUILDER. Real Property Asset.



- ❖ Tier 2 Level in BUILDER. These different spaces within a building and/or groups of components/systems.



- ❖ Tier 3 Level in BUILDER. These are the physical units that make up the building.



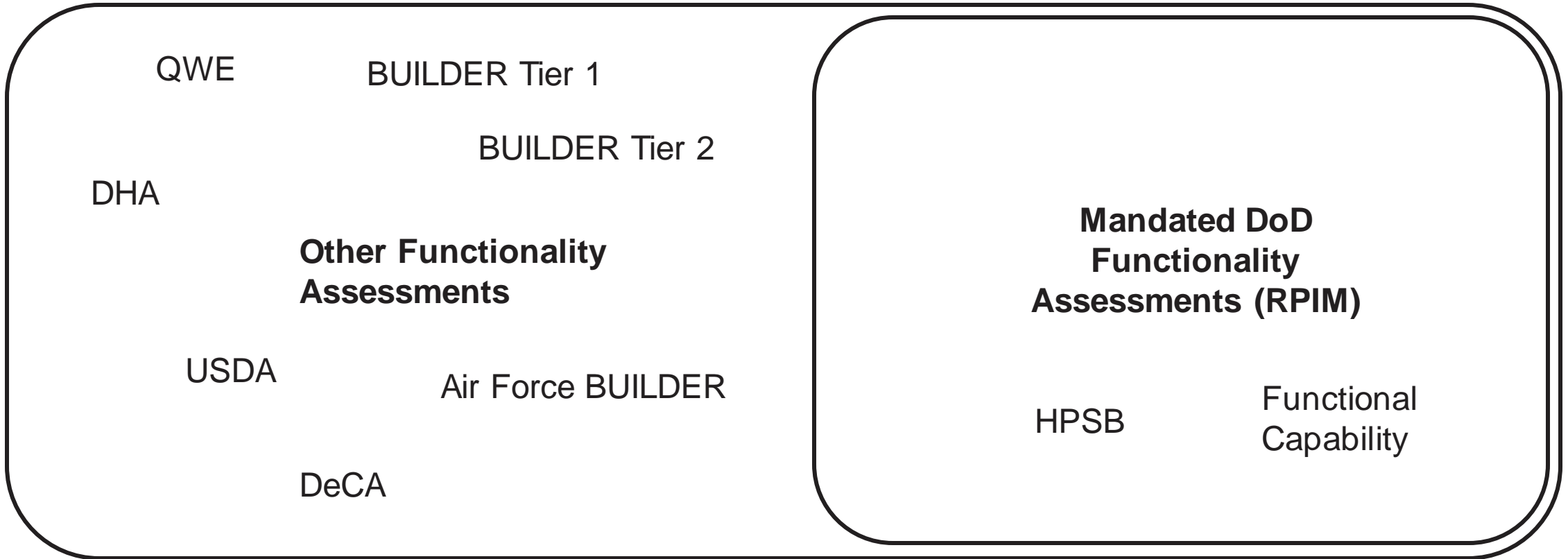


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FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments





WHAT'S POSSIBLE

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• Functionality Module Breakdown

- Assessment Sets
- Assessment
- Categories
- Questions
- Response Types
- Comments
- Images
- Scoring Algorithms
 - Average of Numeric
 - Average ignore NULL
 - FI Deduct Algorithm
 - Custom

New Assessment x

- Record Card Test
- Listbox Test
- TestingNull
- Cultural Resources
- Text Wrap Mockup
- HPSB Facility
- Functionality

[Create New Assessment](#)

Assessments		Graph
Save Close		100
Date	8/4/2023	Status Current Use Type
Title/Question	Response	Action
Access		
Is entry into the building quick and easy?	<input type="radio"/> G+ <input type="radio"/> A <input type="radio"/> R <input type="radio"/> N/A	
Is directional, informational, and room signage in and around the building adequate?	<input type="radio"/> G+ <input type="radio"/> A <input type="radio"/> R <input type="radio"/> N/A 1-10%	
Is exit (egress) from the building quick and easy?	Assessment Wizard	
ADA		
Is the building ADA compliant?	Assessment Wizard	 
Aesthetics		
Does the quality and appearance of the exterior create a positive impression on the public and the building occupants?	<input type="radio"/> G+ <input type="radio"/> A <input type="radio"/> N/A	
Does the quality and appearance of the interior create a positive impression on the public and the building occupants?	<input type="radio"/> G+ <input type="radio"/> A <input type="radio"/> N/A	
ATFP		
Does this building meet ATFP Standards?	Assessment Wizard	

- None
- Checkbox
- Numeric
- Text
- Option
- Dropdown
- Checklist
- Option with Dropdown
- Assessment Wizard
- DropDownWithText
- Summary
- Listbox

SOURCES OF FUNCTIONALITY QUESTIONS



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SOURCES OF FUNCTIONALITY QUESTIONS

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- WBDG, UFGS, UFC
- MRSI
- DODIG-2017-004 “Summary Report - Inspections of DoD Facilities and Military Housing...”
- ASHRAE
- ADA
- ICC
- ASME

- Other organizational standards and policies



FUNCTIONALITY ASSESSMENT EXAMPLES



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BUILDER Baseline Functionality Assessment

- Developed in the 2000s
- More than 65 functionality issues
- Reviewed and edited by independent subject matter experts including architects, engineers, and facility property managers.
- Issues grouped into 14 categories

1. *Access*: [Entry](#); [Signage](#); [Egress](#)

2. *American with Disabilities Act (ADA) Compliance*: [Non-Grandfathered](#); [Grandfathered](#)

3. *Aesthetics*: [Exterior Aesthetics](#); [Interior Aesthetics](#)

4. *Anti-Terrorism/Force Protection (ATFP) Requirements and Recommendations*

5. *Building Services*: [Internal Power Supply](#); [Uninterruptible Power Supply \(UPS\)](#); [Water Supply](#); [Hot Water Supply](#); [Specialty Water Supply](#); [Plumbing Fixtures](#); [Stand-Alone Wastewater Removal](#); [Industrial Wastewater Removal](#); [Information Technology \(IT\) System](#); [Fuel Distribution System](#); [Compressed Air System](#); [Oxygen \(or other gas\) System](#); [Security System](#); [Telephone System](#); [Electrical Distribution](#); [Electrical Grounding](#); [Electrical Outlets](#)

6. *Building Size and Configuration*: [Occupant Interaction](#); [Overcrowding](#); [Configuration](#)

7. *Comfort*: [Heating](#); [Cooling](#); [Dehumidifying](#); [Humidifying](#); [Ventilation](#); [HVAC Controls](#); [Disruptive Noise](#); [Lighting](#); [Lighting Controls](#)

8. *Efficiency and Obsolescence*: [Equipment](#); [HVAC Zones](#); [Lighting Fixtures](#); [Lighting Controls](#); [Water Conservation Mechanisms](#); [Windows and Doors](#); [Insulation](#)

9. *Environmental and Health*: [Lightning Protection](#); [Asbestos](#); [Indoor Air Quality \(IAQ\)](#); [Lead Paint](#); [Lead in Water](#); [Polychlorinated Biphenyls \(PCBs\)](#); [Radon](#); [Fire and Smoke Warning/Detection System](#); [Flammable and Combustible Material Storage](#); [Fire Suppression Equipment](#)

10. *Location*: [Floodplain](#); [Airfield Safety Clearance](#); [Explosive Arc Distance](#); [Excessive Noise](#); [Mission Support](#)

11. *Maintainability*: [Design and Placement of Equipment](#)

12. *Missing or Improper Components*: [Needed and/or Desired Components](#); [Incorrect Component Types](#)

13. *Structural Adequacy*: [Seismic Conditions](#); [Loading Conditions](#)

14. *Cultural Resources*: [Historic Status](#); [Archaeological Site](#)

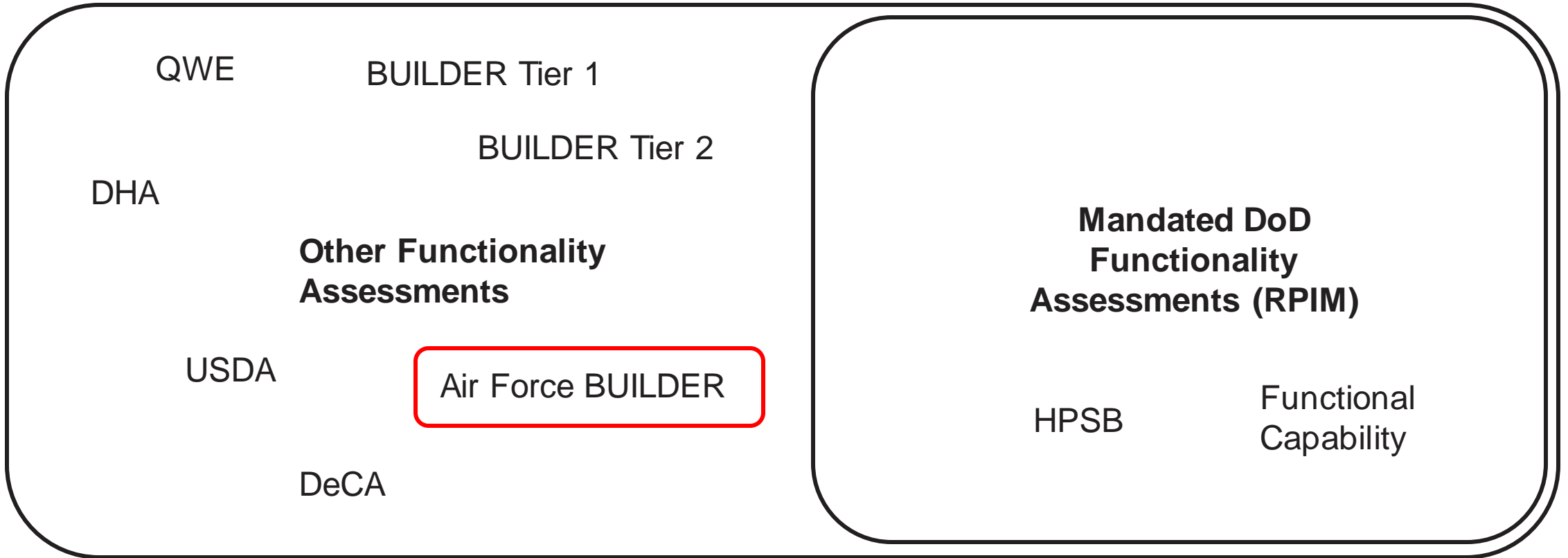




FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments



Air Force BUILDER Baseline Functionality Assessment

- Developed in 2019
- Initiated by the Air Force
- Based on WBDG

DESIGN OBJECTIVES

- > Accessible
- > Aesthetics
- > Cost-Effective
- > Functional / Operational
- > Historic Preservation
- > Productive
- > Secure / Safe
- > Sustainable

Updated Draft (2021)

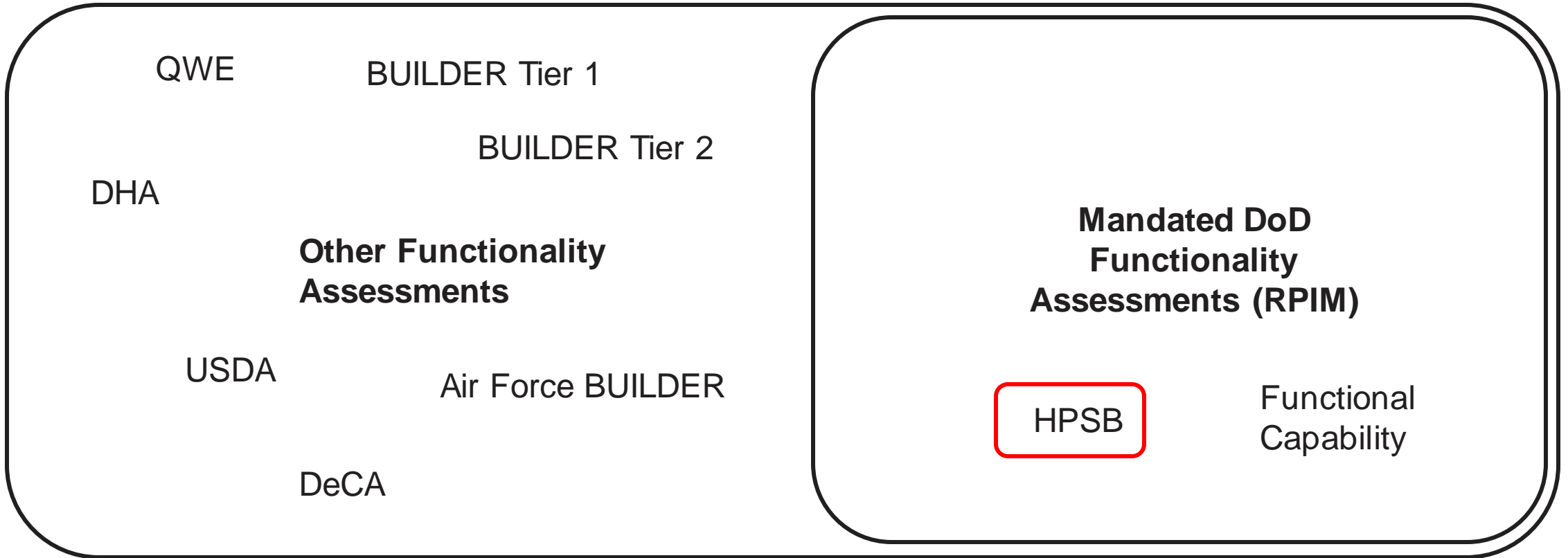
	USAF (NEW DRAFT ASSESSMENT)
▶	Access
▶	Aesthetics
▶	ATFP
▶	Building Services
▶	Building Size and Configuration
▶	Energy Assurance
▶	Safety, Occupational Health
▶	Location
▶	Missing or Improper Components
▶	Structural Adequacy
▶	Cultural Resources



FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments





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FUNCTIONALITY ASSESSMENT EXAMPLES



High Performance Sustainability Building (HPSB)

- Sustainability standards coalesced in 2013
- UFC 1-200-02 High Performance And Sustainable Building Requirements

Title/Question	Response	Action
HPSB Score Sheet - Facility		
Is this building LEED certified?		
What type of certification does this building have?	<input type="radio"/> LEED Regular <input type="radio"/> LEED Silver <input type="radio"/> LEED Gold <input type="radio"/> LEED Platinum	
4-2 Employ Integrated Assessment, Operation, and Management Principles		
4-2.2 Re-Commissioning and Retro-Commissioning		
6. Has the building been commissioned, recommissioned or retro commissioned within the last five years?	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
4-4 Optimize Energy Performance		
4-4.1 Energy Efficiency		
10. Do you require products that are ENERGY STAR -qualified or meet FEMP-designated efficiency when available?	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
11. Are products with the lowest standby power consumption required?	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
9a. Option 1: Demonstrated achievement of an ENGERGY STAR performance score of 75 or higher.	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
9b. Option 2: Demonstrated energy use reduction of 20% compared to 2003.	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
9c. Option 3: Calculated energy use reduction of 20% compared to ASHRAE 90.1 baseline.	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	
9. Have one of the three options below been used to measure/improve efficient energy performance?	<input type="radio"/> N/A	
4-4.3 Measurement and Verification		
13. Does the building have building level electrical, natural gas, and/or steam meters as applicable, connected to an installation wide energy and utility monitoring and control system?	<input type="radio"/> Yes <input type="radio"/> IP <input type="radio"/> N/A <input type="radio"/> No	

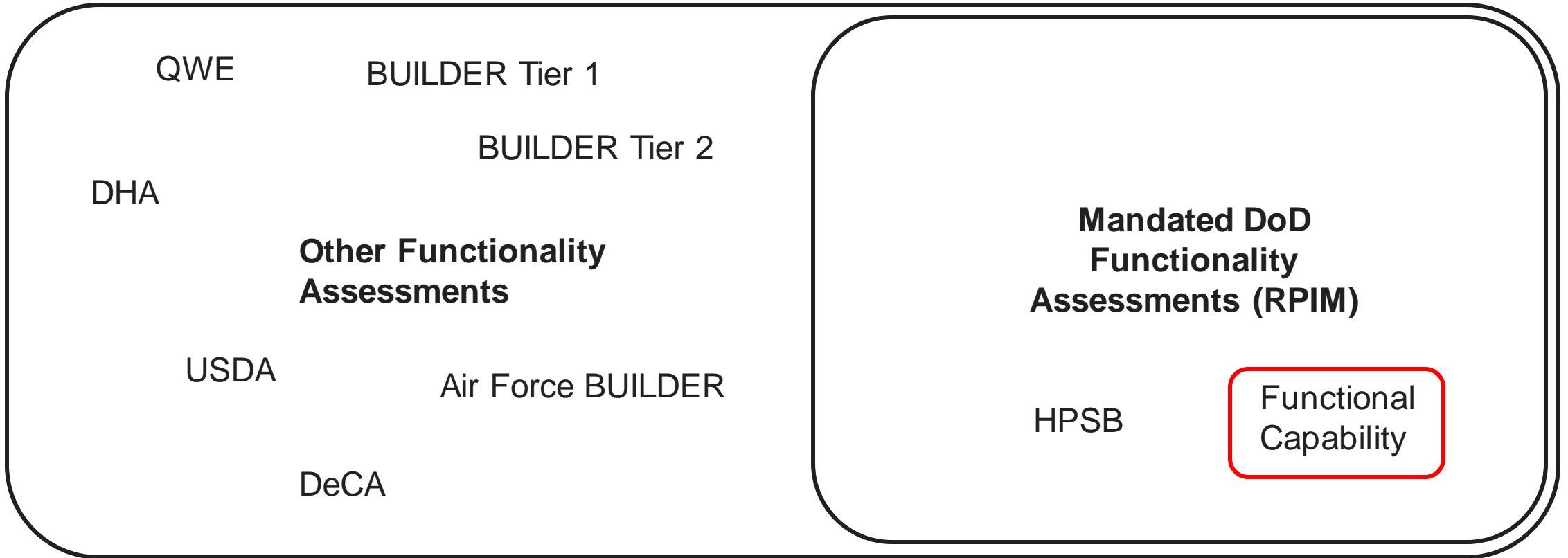




FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments



FUNCTIONALITY ASSESSMENT EXAMPLES

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US Army Current Functional Capability

- *Installation Status Report – Infrastructure (ISR-I)*
- 79 Booklets (assessments) base on Facility Type
- Covers all real property types
- Mission Score 0-100 with interpolated Modernization cost

US Army Future Functional Capability

- *SMS BUILDER*
- Permanent Party Barracks – FY24
- Other facility types FY24+

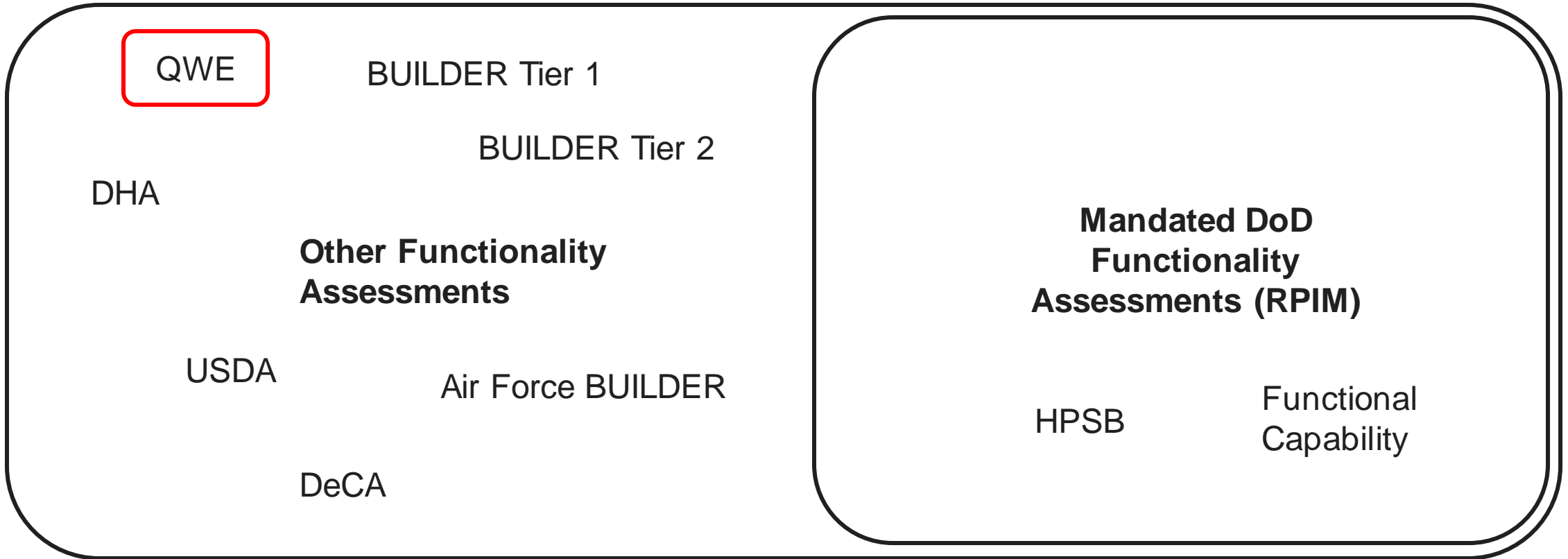




FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments





Quality Work Environment (QWE)

- Initiated in 2010s with checklist available in BUILDER by 2019
- Created for Logistics Readiness Centers (LRC)
- Assessment teams composed of experts in safety, facilities engineering, fire and life safety, industrial hygiene, and ergonomics.

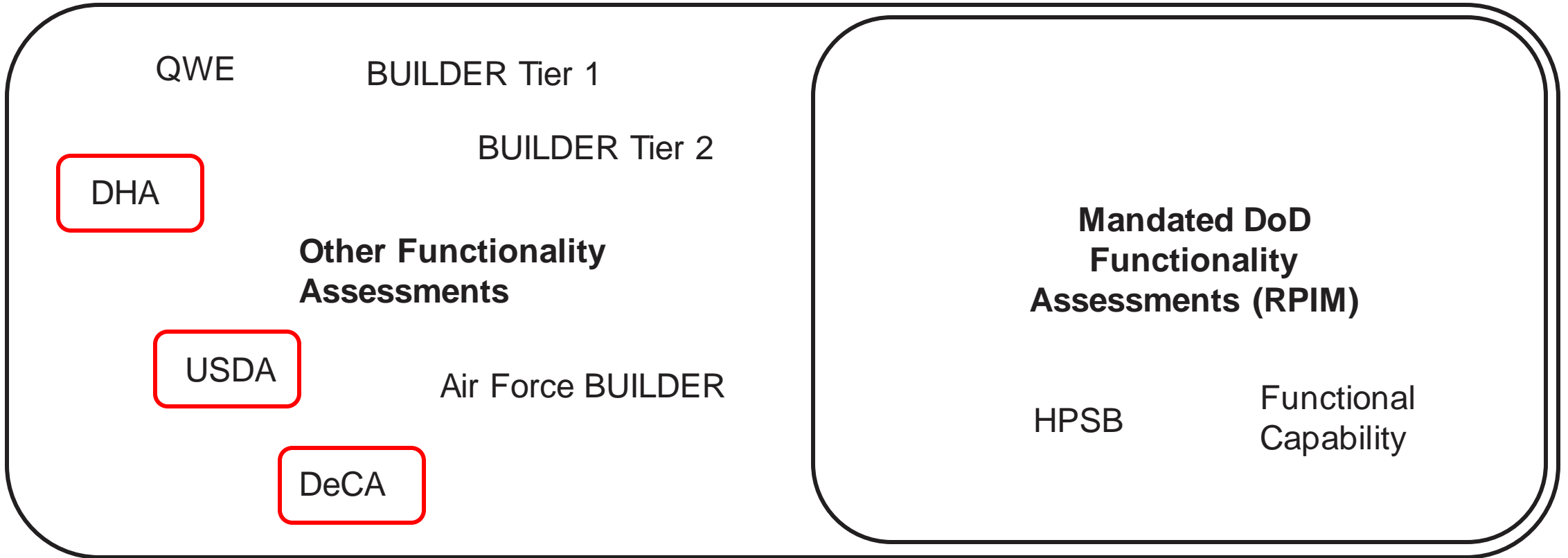




FUNCTIONALITY ASSESSMENTS OVERVIEW



Types of Functionality Assessments



FUTURE RESEARCH & IMPLEMENTATION



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FUTURE RESEARCH OPPORTUNITIES

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- Associate Questions to Inventory
- Work Cost Estimate
 - Beginning research in FY24
 - Tied to component level, based on BFI, obsolescence metric
- Tailoring Functionality Questions to Catcode
- Inventory Standards
 - PRV comparisons, baseline inventory suitability assessment, mission relocation during disaster/emergency events, etc.
- Index Calculations

Access 90

ADA 100

is the building ADA compliant?

Wizard...

supporting information

Item	Name	Description		
Picture	Building 3402 exterior	Shows south-facing entrance to build...	View	Edit
Component	B101006 RAMPS General	Shows south-facing ramp	View	Edit
Component	B101006 RAMPS General	Shows west-facing ramp	View	Edit
Component	D101002 PASSENGER ELEVATORS Main	Elevator main near west entrance	View	Edit
Add item				





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QUESTIONS?

