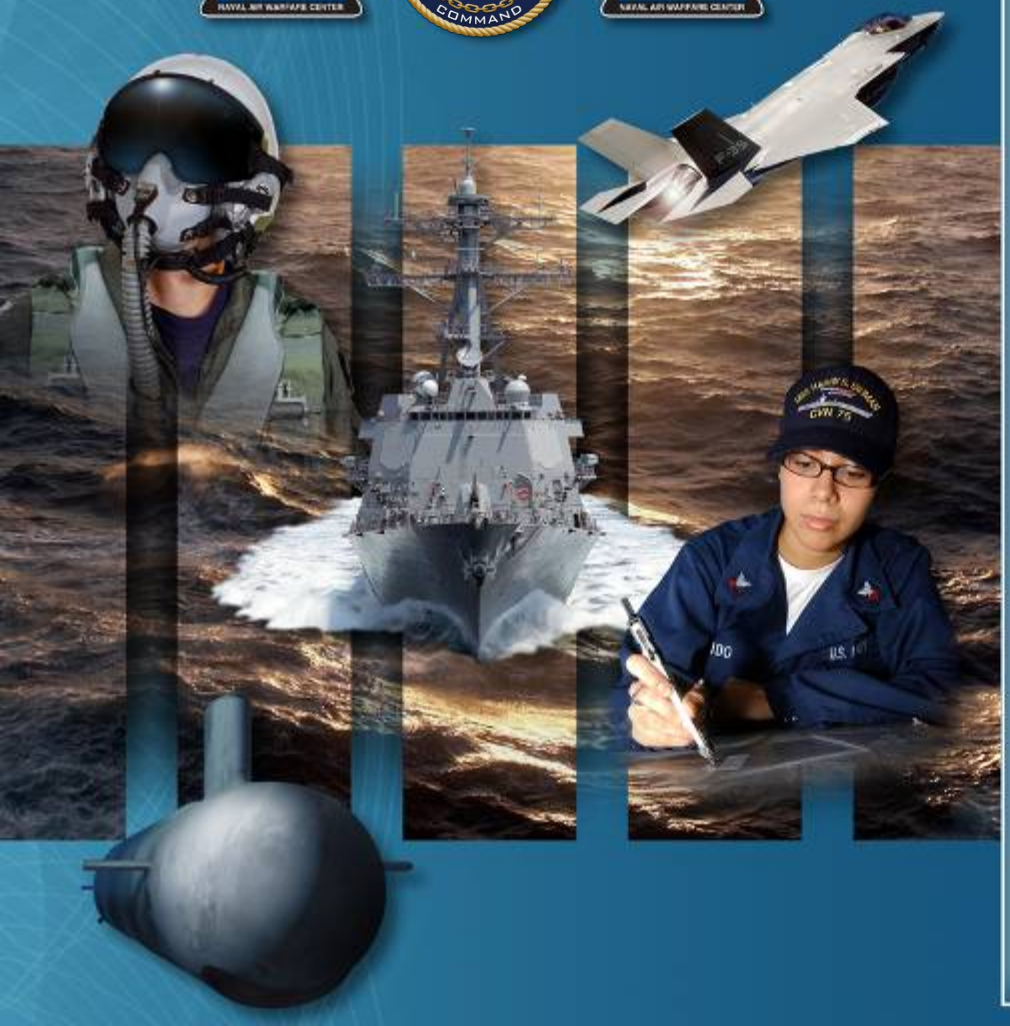
NAVAL AIR WARFARE CENTER
TRAINING SYSTEMS DIVISION
ORLANDO FLORIDA



HSI Progress & Risk Specification Tool (HPRST)

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Background: Tasking

- Formed at direction of ASD(R&E) HPTB at TAG 68 May 2014;
- Effort funded by ONR Code 34 in July 2015

Original Mission Statement:

- Produce a model to be used by HSI professionals and PM leadership to enable better incorporation of HSI requirements into systems acquisition
- Develop a system that can be used to describe progress toward acquisition review and milestone requirements and incorporation of HSI requirements into programmatic decision-making

Updated Mission Statement:

- Update the model to reflect incorporation of risk
- Produce a tool to help HSI practitioners quickly develop thorough, informed programmatic risks

New Model/Tool Target Audience:

- Joint DoD HSI community – not a Navy-centric product
- Journeyman-level HSI practitioners & PM/LSE stakeholders

Purposes of the HPRST

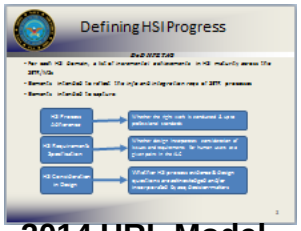
- **Purposes of this tool:**
  - Communications aid to help practitioners and PMs recognize HSI requirements and consequences more readily and earlier
  - Job aid to help HSI practitioners discover and articulate risks to PMs

- The **HSI Progress-Risk Specification Tool (HPRST)** will help practitioners link HSI process issues/omissions to resulting potential risks across the ALC.

- Stakeholders will:
  - Evaluate general progress requirements by SETR/MS
  - Consult the list of problems/risks linked to domains and ALC locations when developing or updating program risks
  - Each list is accompanied by potential mitigation strategies for consideration

HPRST is not a readiness scale

HPRST Components:
HSI Progress & Potential Risks



2014 HRL Model

What should have been done by this point?

What are the consequences?

Tie to Program Specifics

Dev Plan

ASR

MS A

SRR/ SFR

PDR

MS B

CDR

MS C

DI HF ESOH M HSI Progress Hab P T Sv

DI HF ESOH M Potential Risks Hab P T Sv

Program-Specific Risks

Not provided by the HPRST

Cost

Sys Perf

Sked

Safety

Cost

Sys Perf

Sked

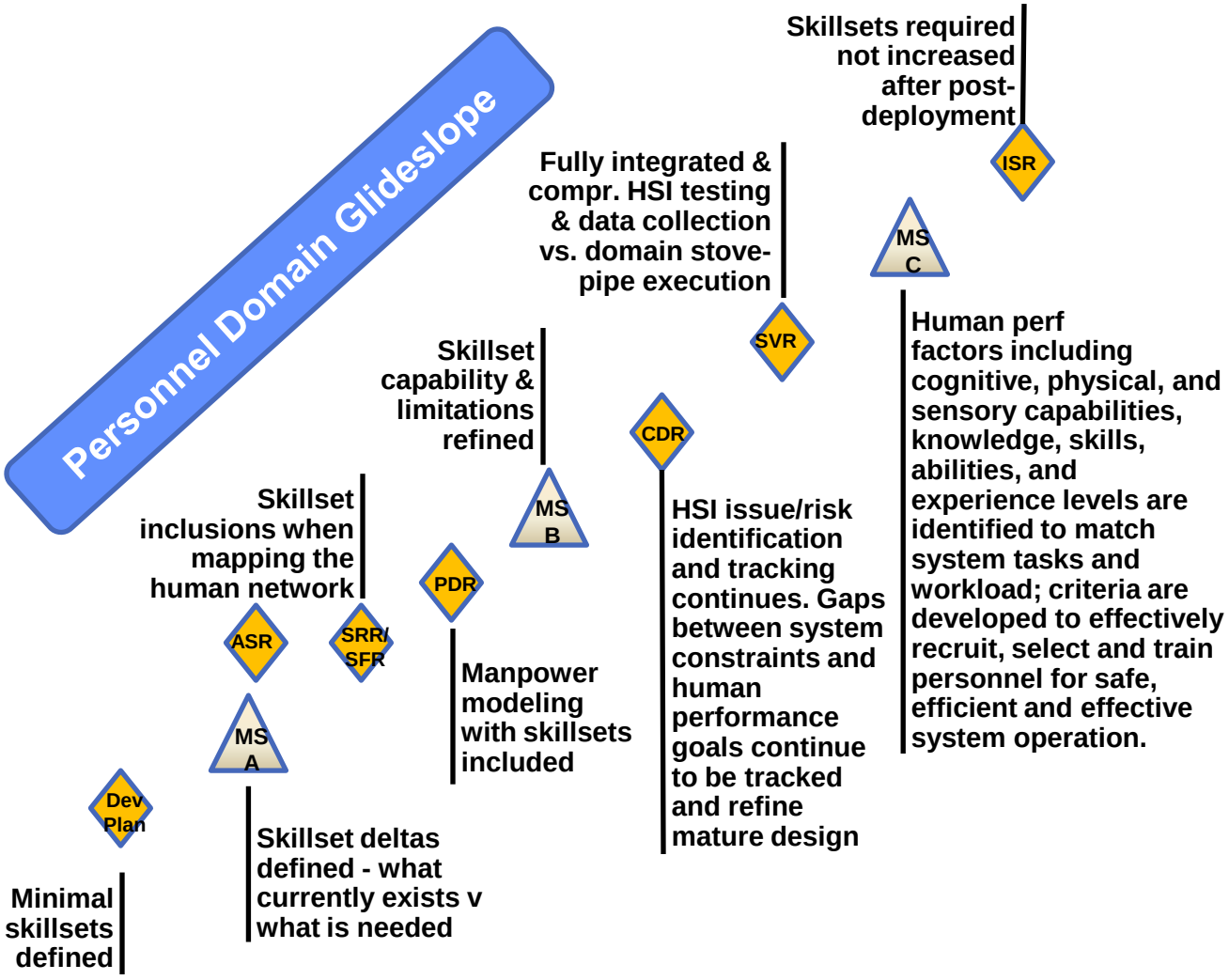
Safety

General

General

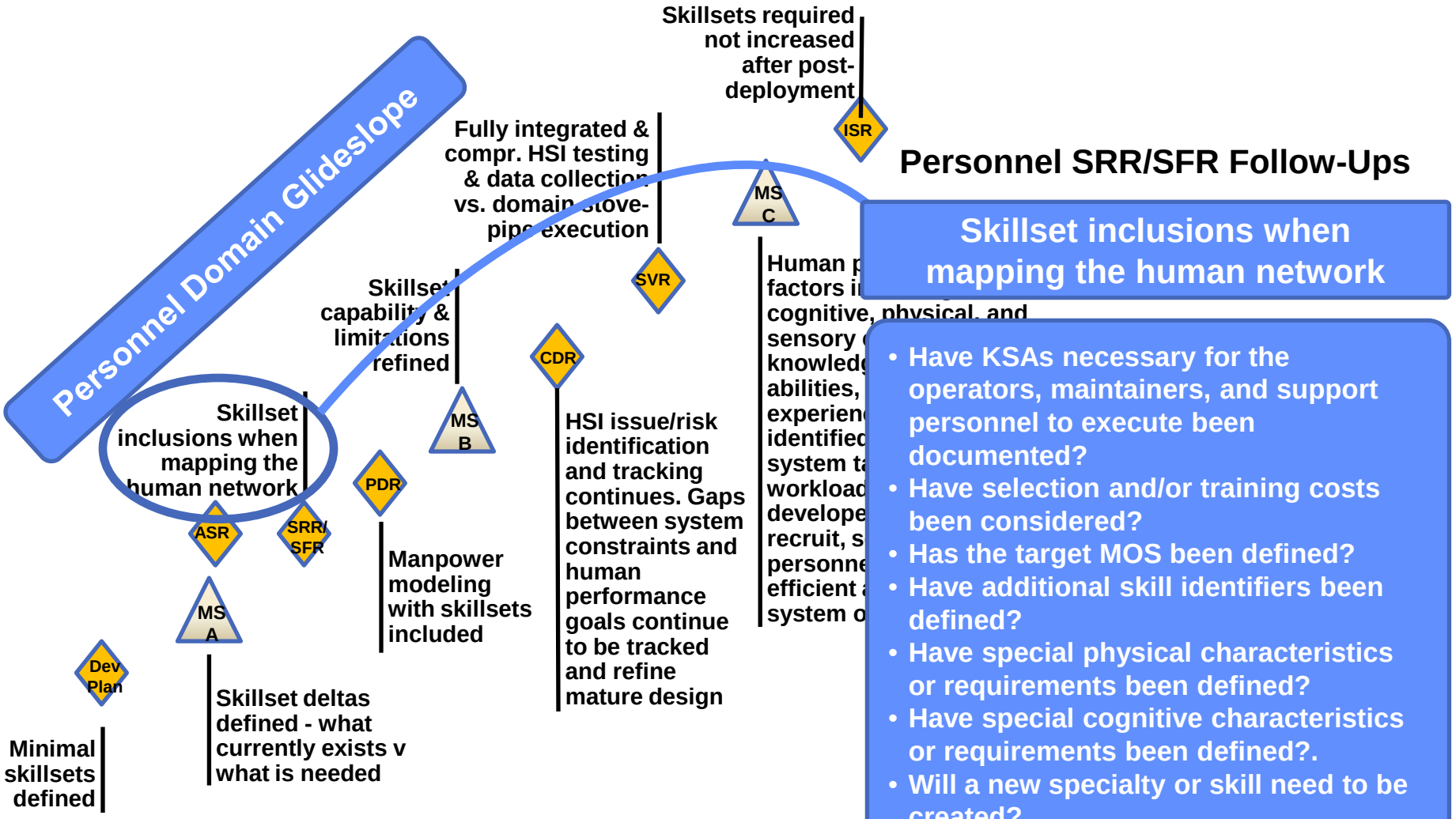
Specific

HSI Progress



- Progress glideslopes defined for each HSI domain and for integration requirements
- Each glideslope element includes multiple follow-up questions summarizing acq guidance across services

HSI Progress: Personnel Domain SRR/SFR



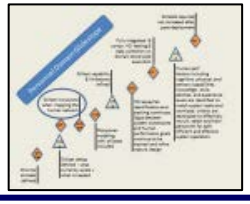
Personnel SRR/SFR Follow-Ups

Skillset inclusions when mapping the human network

- Have KSAs necessary for the operators, maintainers, and support personnel to execute been documented?
- Have selection and/or training costs been considered?
- Has the target MOS been defined?
- Have additional skill identifiers been defined?
- Have special physical characteristics or requirements been defined?
- Have special cognitive characteristics or requirements been defined?.
- Will a new specialty or skill need to be created?

Defining Consequences

- Consequences are the problems that will likely occur when the HSI processes are not adhered to properly.
- These potential problems, if allowed to continue festering, may adversely affect the program in terms of risks to total system performance (if not directly to system performance then by extension due to decrements in human performance), cost, schedule, and safety.
- Consequences lists are specific to the HSI domains as well as to the domain integration level.



Example: Potential Consequences by Risk Area at SRR/SFR for Personnel Domain

Skillset inclusions when mapping the human network

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System Performance

- Without considering personnel concerns a potential mismatch between the skill sets required for operating/maintaining the materiel solution & skill sets available in the user population could emerge.
- Operators may not have the skills necessary to operate the system, which will reduce the efficacy of the system, the system will not be used to its fullest capability and the system performance will decrease.

Cost

- Down the road, attempting to address the skill set mismatch could incur costly fixes. A mismatch could occur between what the materiel solution requires and what the services would be willing to provide regarding the structure and skill content of MOS.
- Still time to correct for deficiencies before major costs kick in.

Schedule

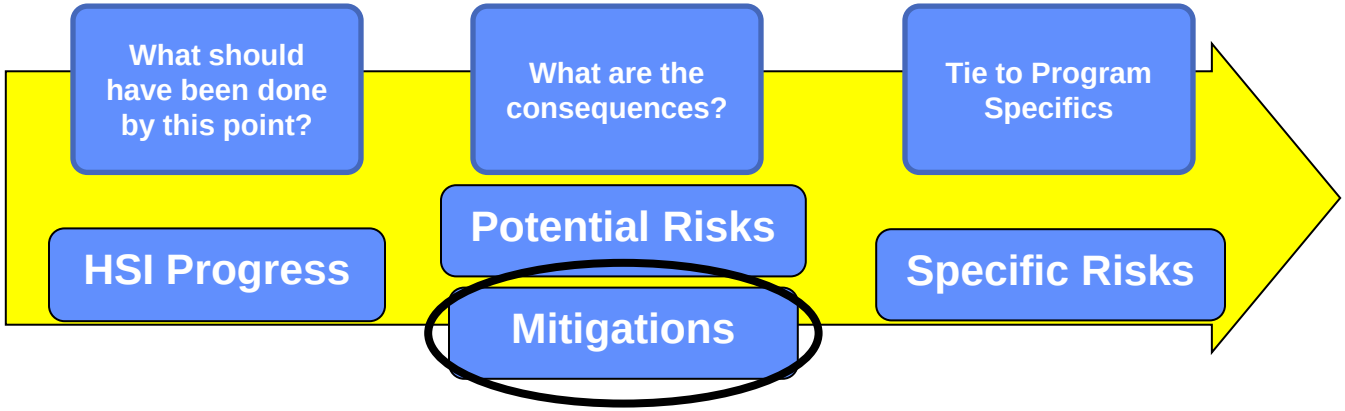
- Down the road, attempting to address the skill set mismatch could significantly add to the design schedule or sideline the deployed system until it can be remediated.
- Still time to correct for deficiencies before major schedule impacts result.

Safety

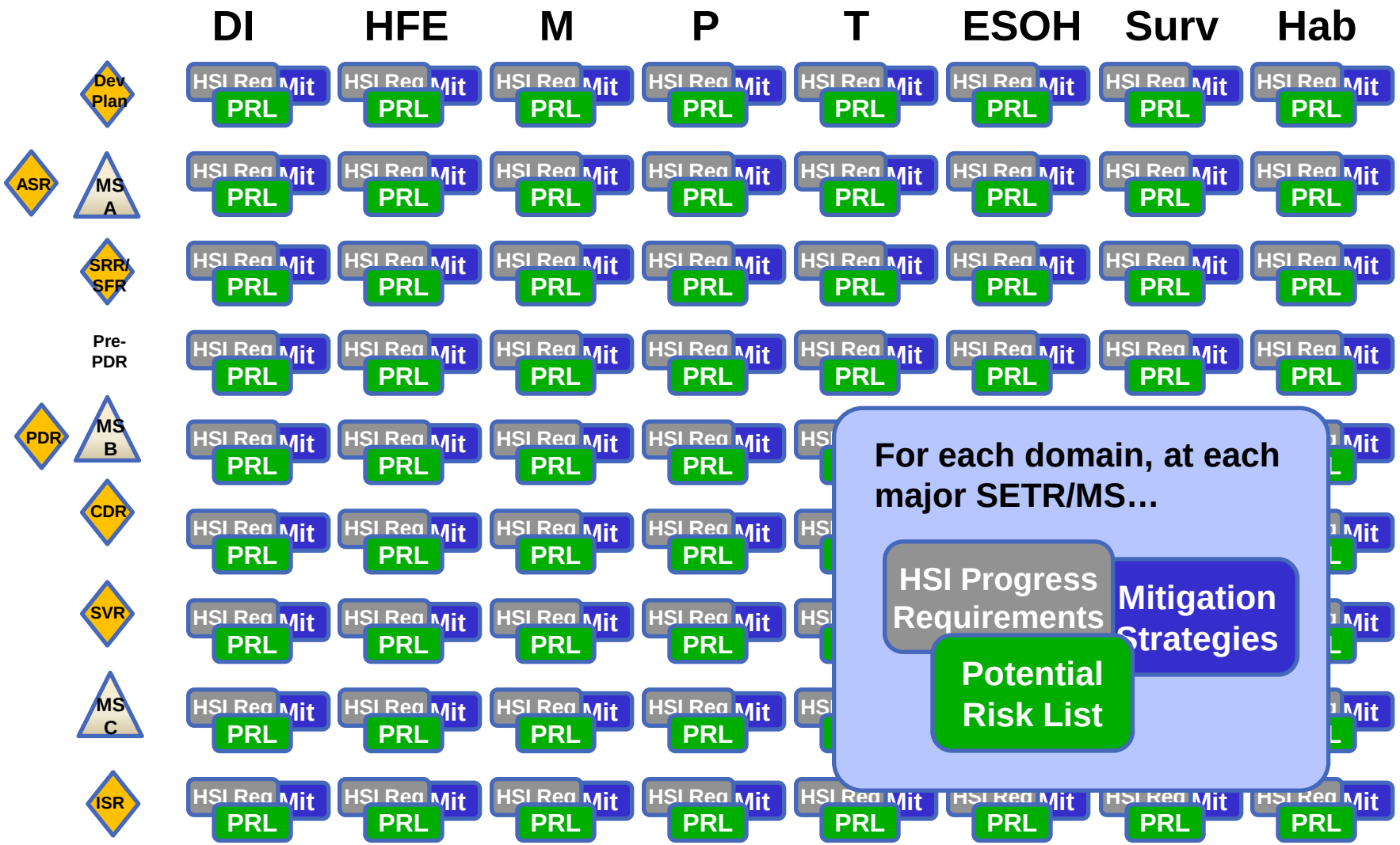
- If a required skill set is not part of the users MOS then the user may improperly operate or maintain the system, which could pose a potential harm to the individual, others, and/or the system.

Mitigation Action Guidance for Potential Problems

- Mitigation Actions provide general guidelines for addressing the problems faced for deficient HSI progress.
- Problems will have different mitigation approaches & strategies based on the severity of the problem and the location in the ALC.
- The mitigation strategies may be affected by the technical and financial priorities of the program (i.e., individual risks may be absorbed based on the constraints of the program).



HPRST Contents



The Real Goal: Timely & Complete Program-Specific Risks & Mitigation Strategies

Depicted: Risks across domains for Body Armor Program at SRR

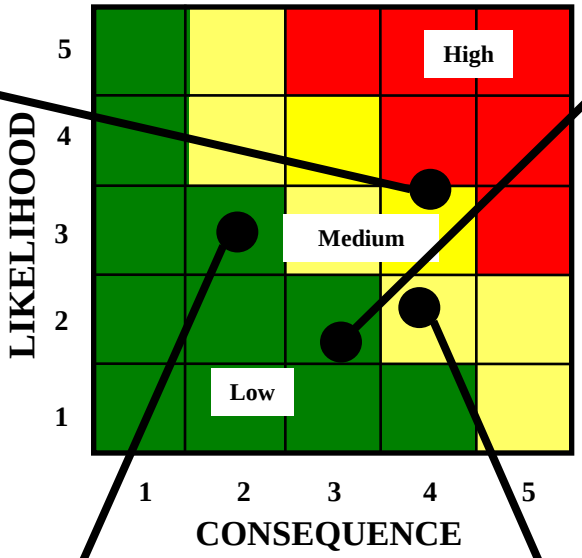
Risk 1: Personnel survivability yet to be assessed for the new body armor (P/Safety)

Root Cause: Due to contract issues, access to the Human Effects experts, and lack of a stable preliminary design, the personnel survivability requirements for the program have yet to be adequately assessed, modeled, or initially verified.

Consequence: If the analysis is delayed further, locking down the critical design will be delayed as will testing.

Mitigation: Solicit human effects experts from more than one organization and lock down parts of the design that don't have survivability impact.

Survivability-Driven



Risk 2: Lack of Schoolhouse Training (C/Sk/P)

Root Cause: Given that there is the requirement to not increase manpower or create a new MOS, no formal sustainment training will be offered by the schoolhouse. Program will have to rely on NET for incidental operators.

Consequence: If fully realized, only NET will be offered and operators at each unit will have to train their replacements. This leads to a lack of standardization of trained operators and no true sustainment plan.

Mitigation: MPT IPT to continue MPTA and MPTP to determine full impacts and exploring COAs such as CDD change that requires an MOS for this program.

DI-Driven

Risk 3: Software integration of two existing GOTS programs (C/P)

Root Cause: Two existing (and overlapping) GOTS software programs are planned for integration into a single app for the handheld system. Each was designed with a different usability look and feel, which may lead to usability issues during integration and when "redesign" is limited due to cost and schedule.

Consequence: If realized, forward observers will be forced to use a disjointed software app to request calls-for-fire leading to forced errors and potential C2 mission ineffectiveness.

Mitigation: Complete an analysis of each software program to determine COAs for a seamless usability approach including time, schedule, and human error analysis.

HF-Driven

Risk 4: System packaging and handling design (Sk/P)

Root Cause: Legacy system and increment upgrade did not utilize MIL-STD-1472 carry and lift limit criteria as a basis for packing the system.

Consequence: Required manpower to safely carry and lift the cases may not be available or feasible.

Mitigation: Conduct a full carry and lift analysis of the case designs that will be presented by the prime at PDR to determine full impact.

HF & Manpower-Driven

HPRST

QUESTIONS