Challenges in HSI Planning

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Yakir Yaniv

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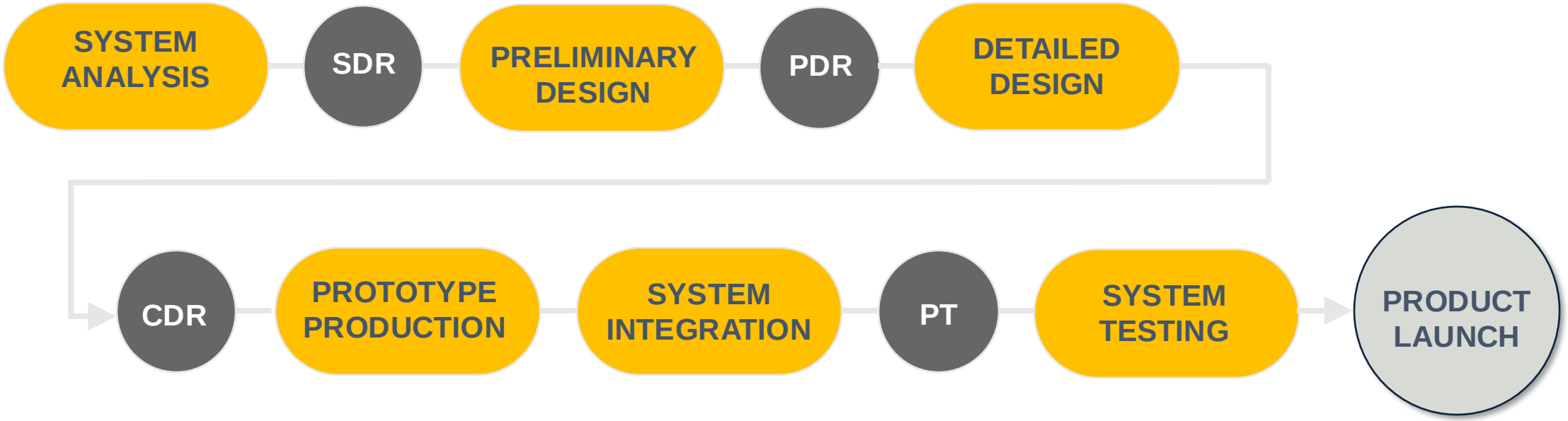
System development work plan



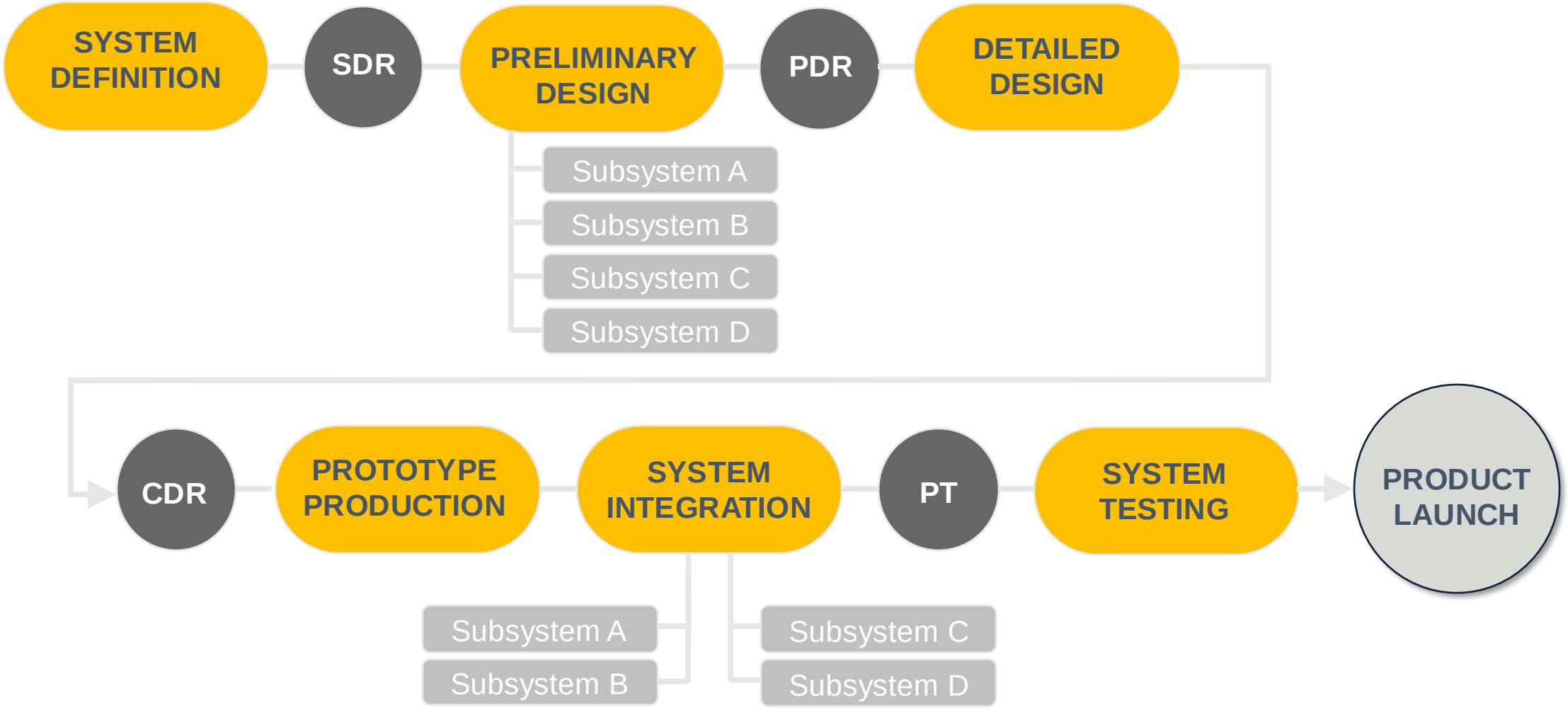
SDR - system description review

PDR - preliminary design review

CDR - critical design review

PT. - prototype

System development work plan



Alert lights

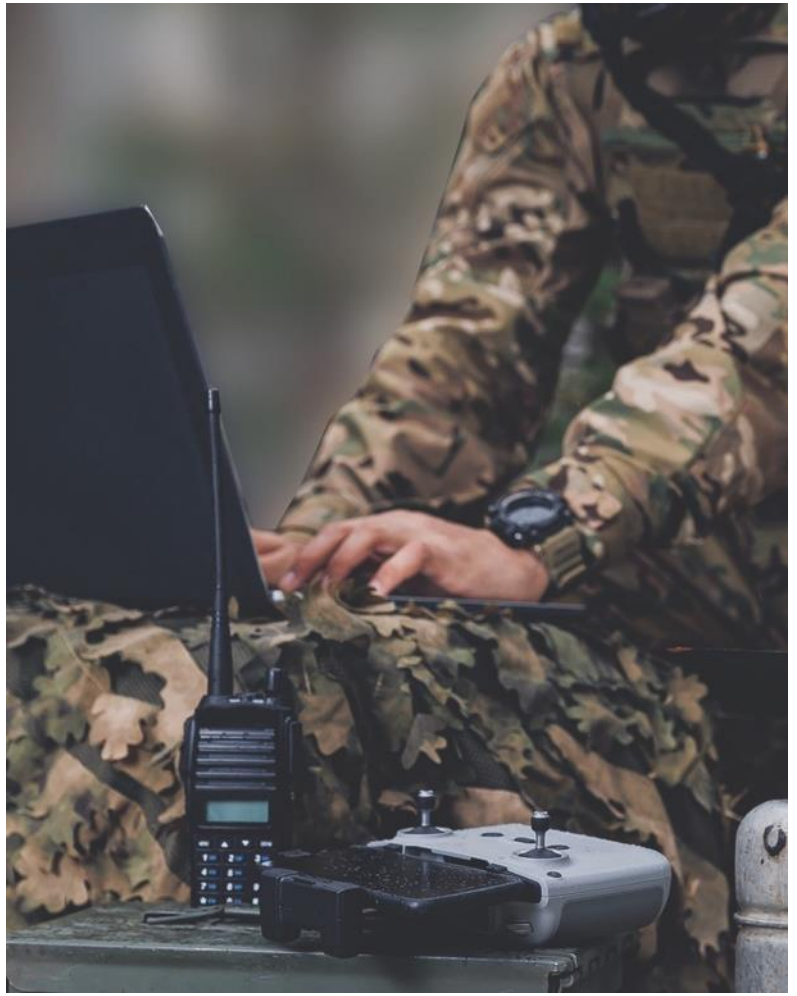
Graphic user interface

Buttons & controls

Machine door

Challenges in HSI Planning

1. **Aligning Disciplines activities**: System engineers and human factors engineers need to collaborate effectively, despite their different expertise and knowledge gaps they may have in each other's work.
2. **Resource Allocation**: Allocating time, budget, and personnel for HSI activities is not trivial in most cases.
3. **Integration into Project work-plan**: The HSI plan must be integrated into the overall project plan.
4. **Standards and Guidelines**: Existing standards can sometimes seem detailed and complicated, raising concerns about their impact on the development process."



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Activities and outcomes

Definitions & requirements

- HSI Plan
- HFE Requirements

- Users' definition
- User requirements
- System requirements
- Concept of use
- Maintenance concept
- Ergonomic requirements
- Roles definition

Design files

- Design files

Analyses and reports

- Insights
- Reports
- Design updates

Types of products

Definitions & requirements

- HSI Plan
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- UX/UI files
- Physical interface definitions
- Ergonomic design sketches
- Simulations and models

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- Task analysis
- Use related risk analysis
- Usability test reports
- Design challenges mitigations
- Cognitive workload analysis
- Requirements compliance report

Objectives of HSI Plan

1. **Customize the scope of HSI activities** to align with the unique requirements of the program.

2. **Specify and incorporate HSI activities** at each stage of the program work plan.

3. **Establish a dedicated HSI team** for the program, ensuring a specialized focus on human-centric considerations.

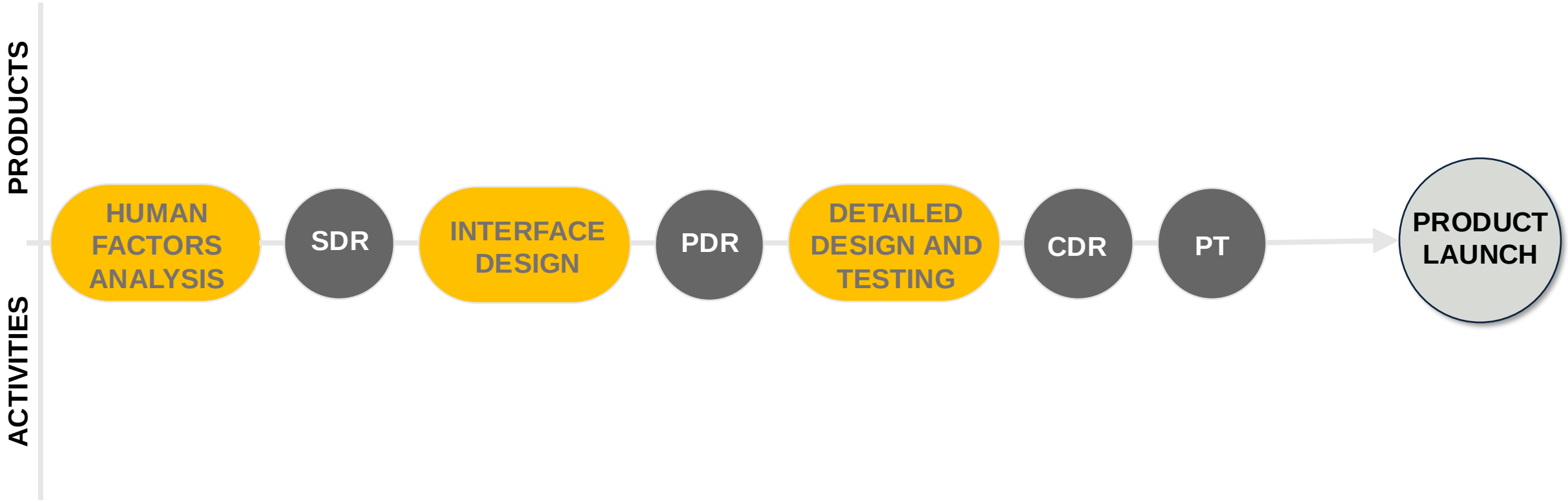
4. **Implement continuous user engagement** management strategies throughout the program's lifecycle.

5. **Validate the result to** ensure compliance with HSI requirements and standards.

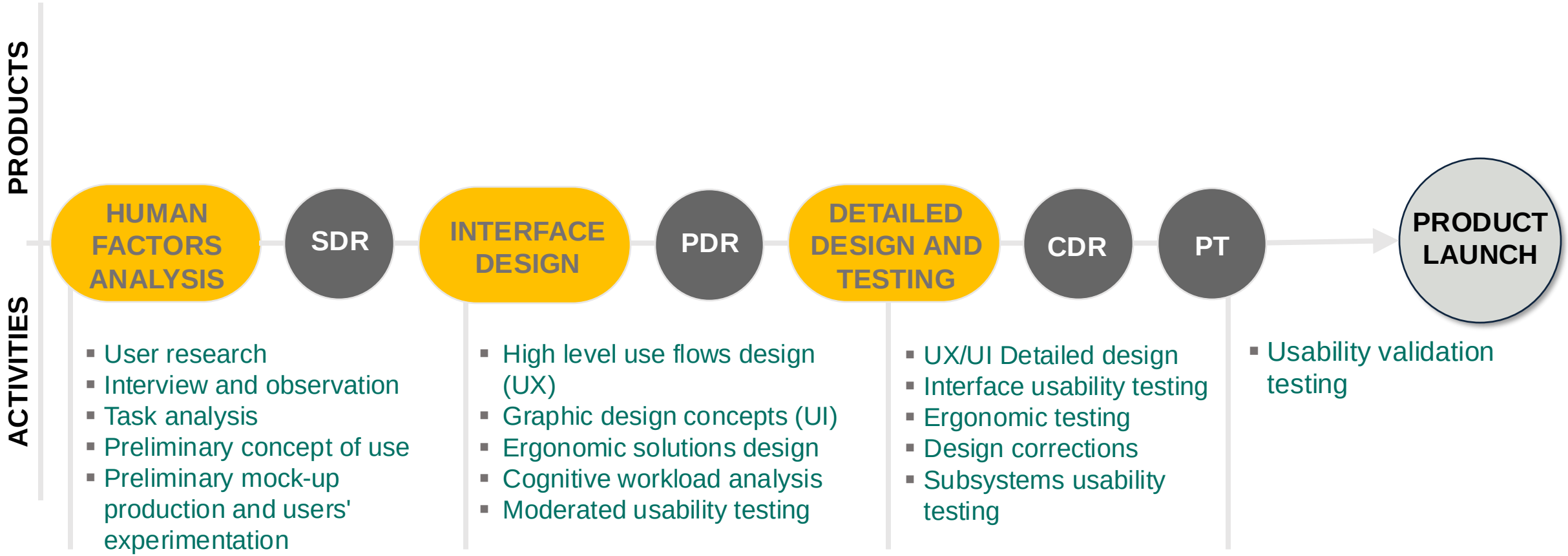
Practices for good planning

1. **Understand Each Other's Expertise**: System engineers and HSI leads should familiarize themselves with each other's domains.
2. **Early Stakeholder Engagement**: Involve all relevant stakeholders from the beginning to align goals and expectations.
3. **Plan According to Project Timetable**: Align HSI activities with the project's schedule and budget.
4. **Be Proactive**: Anticipate needs and risks, and collaborate closely with engineering teams."
5. **Be Part of the IPT Team**: Integrate HSI professionals into the Integrated Product Team (IPT).

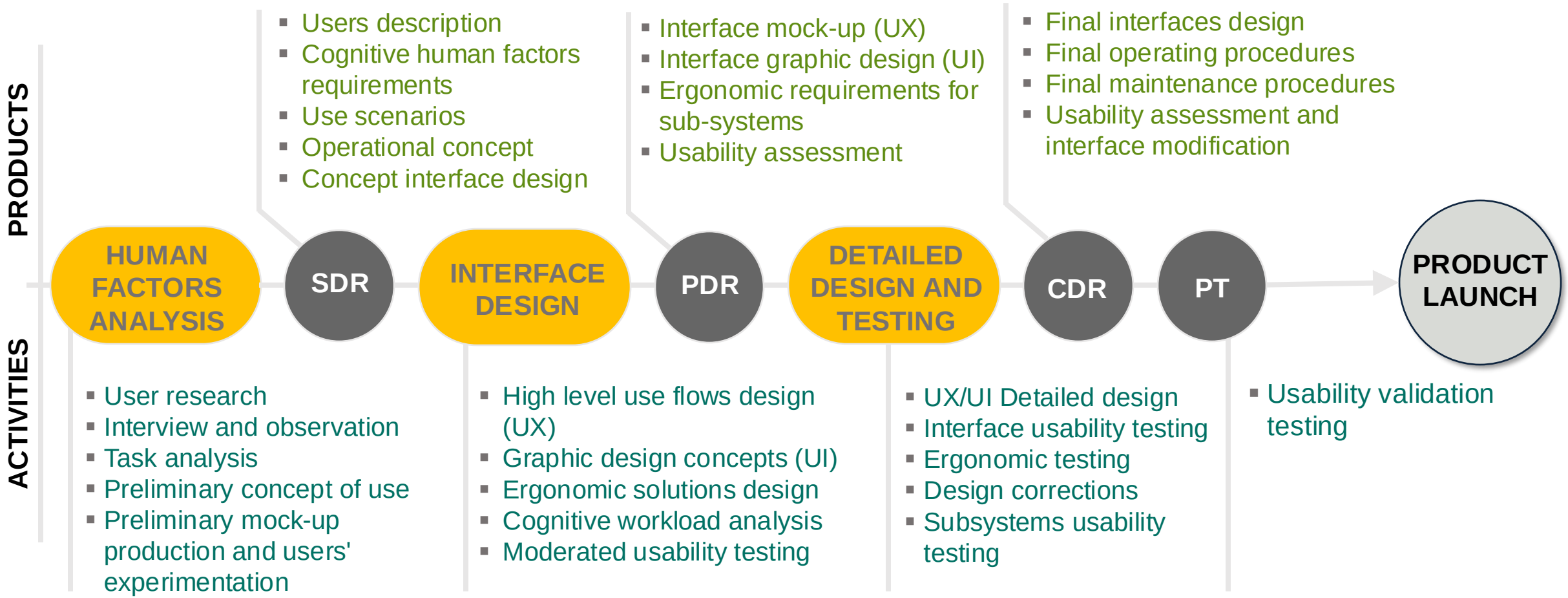
Human system integration plan



Human system integration plan



Human system integration plan



HSI Standards

USA – Department Of Defense

- MIL-STD 46855A – Human engineering requirements for military systems, equipment, and facilities
- DI-HFAC-81742 - Human Engineering Program Plan
- DI-HFAC-81743 - Human Systems Integration Program Plan (HSIPP)
- MIL-STD 1472H – Design criteria standards Human Engineering

UK – Ministry Of Defence

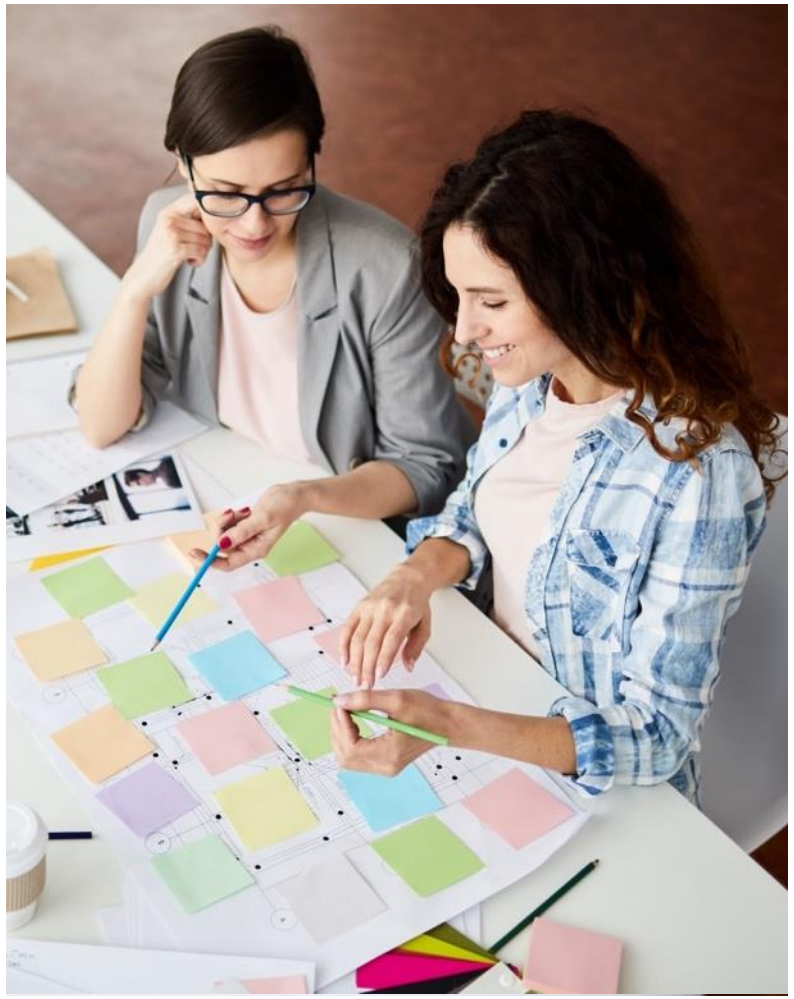
- JSP 912 - Human factors integration for defence systems: Directive and guidance
- DEF-STEN 00-251 – Human factors integration for defence systems
- Human Factors Integration Technical Guides

Benefits of good planning

1. **Budget Management**
   Planning HSI activities from the beginning helps avoid budget overruns.

2. **Design Efficiency**
   Considering human factors early reduces the need for costly design changes later.

3. **Early Issue Detection**
   Usability testing integrated into the project helps identify and address issues before final production.



Thank you

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