RISSB product for prioritisation

Primary information	
Type of product being suggested:	Guideline
Title of product being suggested:	Human Factors Integration to the Project Lifecycle
Date of suggestion:	12 February 2018
Reason for suggestion:	It's a gap in the existing RISSB HFI guidance, even though it's really the context within which the current HFI Standard and guidance documents will sit. There's a huge amount of project work occurring across the rail industry at present and there's no template on what good HFI (and therefore effective HF assurance for a Project) looks like – particularly what HF activities should be occurring when in order to achieve effective HFI so as to get good outcomes for rail organisations at project completion. In practice, projects are still being scoped without adequate consideration of HF resourcing requirements and HF practitioners are often being engaged too late to provide meaningful input.
	It would be great to consolidate the current learnings of rail HF practitioners who are supporting projects into an agreed approach so we're all working consistently, which then helps manage the expectations of contractors, regulators and RTOs alike in terms of what an effective Project HFI program is.
Railway discipline area:	Rail projects – HF Assurance/Systems Safety Assurance (covers all disciplines within that)

Scope:
The document will provide guidance on human factors integration across a typical project lifecycle, mapping HF activities on the project and system safety assurance lifecycle (from concept through to transition into service) to show what activities typically occur at the different project stages. The aim is to provide a good practice template for project HFI that would help an organisation scale and manage their project HFI activities, supporting them to produce a defensible HF assurance case at Project Completion. It would also provide some illustrative examples of HF deliverables to give guidance and templates for HF practitioners supporting rail projects.

The audience would be those scoping projects (whether at state level or within RTOs), those responsible for project planning and resourcing, and those accountable for the implementation and assurance of HFI programs within a project. |

Objective:
The guidance would be aimed at setting a good practice benchmark for project HFI that would help set expectations for those scoping and implementing rail projects, particularly in terms of establishing and implementing a HFI program, in order to meet the requirements of rail safety national law. The objective is improving the implementation and effectiveness of HFI into projects.

Hazard identification: (examples provided – these link to the broader benefits of HFI)			
1	Risk associated with/designs that fail to consider human error/ human reliability	6	Designs adversely impacting the platform-train interface
2	Poor user interface design, e.g. HCI and design of control panels and systems	7	Operator workload and task design
3	Failure to support maintenance tasks and access requirements	8	Passenger and staff safety and security through design mitigation
4	Signalling designs that do not sufficiently account for drivability and SPAD risk	9	Integration of risk and hazard mitigation into training to support transition into service
5	Access and handling error	10	System integration failure

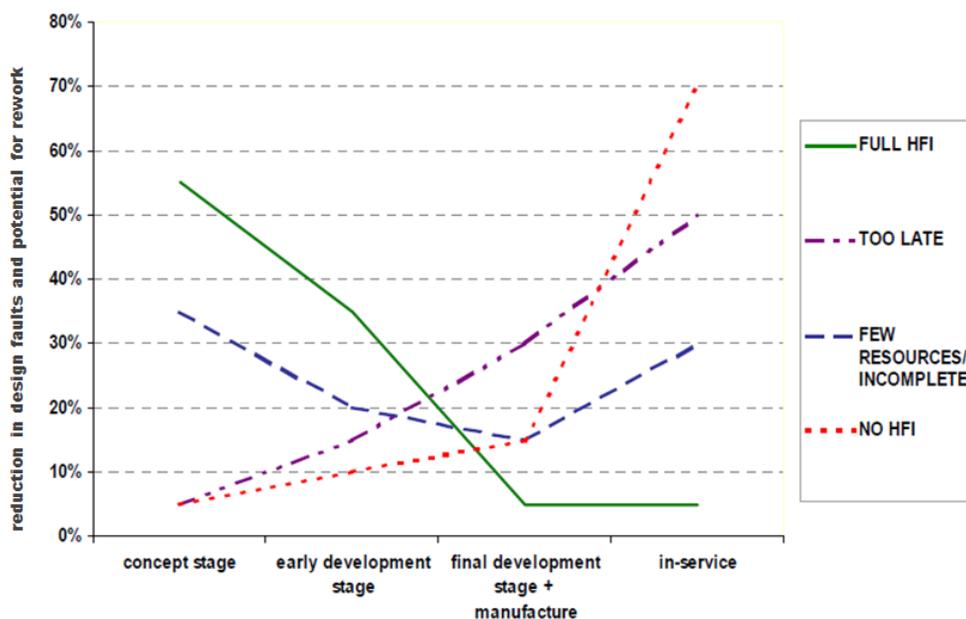| Benefits: |
|---|
| Safety |
| The implementation of this guidance will lead to benefits in terms of the following –
• measurable improvements in safety (reduced risk, fewer safety failings), particularly with respect to safety incidents resulting from error through poor design
• reduce safety risk so far as is reasonably practicable through demonstrating consideration of HFI across the whole project lifecycle, and including through integration into risk and assurance activities |
| Interoperability[i] / harmonisation[ii] |
| The guidance would provide a consistent approach to HFI that could be adapted by all rail organisations, as well as all contractors undertaking work on their network. Given the number of contractors who undertake project works across multiple states, this also establishes clear expectations for good practice that will be reinforced wherever in the country rail project works are undertaken. |
| Financial |
| • cost savings as a result of less rework or retrofitting, as may result from failing to consider HF issues and risks early on in a project. Research has shown that engaging HF from concept stage reduces the cost associated with design faults and required rework by up to 65% by the transition into service phase compared with incomplete, delayed or absent HFI.

Adapted from: BAE Systems (2009) Cost-Benefit Analysis for Human Factors Integration: A Practical Guide. HFI DTC Report HFI DTC/WP 2.7.2/3

• guidance on scalability of HFI activities based on a project scope will also help save costs for projects by ensuring HF programs are sized appropriate for the nature and scale of works. |
| Environmental |
| N/A |
| Impacts: |
| Potentially scaling – would need to be clear on scope but mapping onto the project/SSA lifecycle and then referring to the existing HFI guidance and standard would help reduce overlap. |

i Interoperability - the ability of a process, system or a product to work with other process, systems or products (aka compatible systems through managed interfaces).

ii Harmonisation - the act of bringing into agreement so as to work effectively together (aka uniformity of systems)