

HFI in Trade-Offs

Previous research within the HFI DTC identified that HFI issues tend not to be considered, are underestimated or are not expressed with sufficient relevance to the system requirements and design for them to receive sufficient attention in trade-off decisions. The research suggested that a process needed to be developed to assist in representing the HFI impact within trade-off decisions throughout the project lifecycle.

The process guides HFI personnel and stakeholders in the preparation and presentation of the trade-off argument. One of the key parts of the process is the description of the consequences and impact of ignoring a particular human factors issue, expressed in terms of a range of factors including the following:

- Project related risk (e.g. time and cost)
- Operational capability risk (e.g. likely effect on KURs, URD, SRD, CONEMP)
- Operational effectiveness risk (e.g. likely effect on CONOPS)
- Safety/health and safety legislation and standards
- Duty of care
- Whole life costs

The application of the process is demonstrated through the use of case studies. The study also highlights several potential argument structures for expressing the HFI trade-off information. These include Goal Structured Notation, Quality Maps and Quality Function Deployment.

The steps involved in the process, described in detail in a report, can be summarised thus:

1. Identify HF Issue and/or Problem
2. Identify HFI Domain-Specific Impacts
3. Identify Potential Mitigation Options
4. Identify Project Impacts (including operational and other impacts described in abstract above)
5. Formulate and Represent the Argument (and potential mitigations)

This process will help HF and non-HF specialists better understand and express the potential impacts that HF issues are likely to have on the user, system and operational performance.

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