

# Human Factor Services

October 2016

Services	Description and Examples
Human Factors (HF) Integration Plans	<p>A HF Integration Plan defines the HF activities to be conducted throughout a project’s lifecycle to ensure that appropriate HF integration into the design development is achieved. Example include:</p> <ul style="list-style-type: none"> <li>• HFIP for the Metropolitan Line Extension Project</li> <li>• HFIP for the Bond Street Station Upgrade Project</li> <li>• HFIP for the South Bank Place Development Project: London Underground - New Waterloo Station Entrance on York Road</li> <li>• HFIP for Hammersmith Station &amp; Depot Upgrade Project (H&amp;C)</li> <li>• HFIP for Lillie Bridge Depot Upgrade Project</li> </ul>
HF Issues Log	<p>HF issue log is created at the early project stages and is used to keep a record HF issues from identification through to resolution and close out. The completed log is used to support the final design compliance submission.</p> <ul style="list-style-type: none"> <li>• HFIL for Tottenham Hale Station Upgrade Programme</li> <li>• HFIL for Bond Street Station Upgrade Programme</li> <li>• HFIL for Lillie Bridge Depot Upgrade Project</li> </ul>
Task Analysis	<p>The Predictive Task Analysis (PTA) describes what users will do with the new or altered equipment or systems. Documenting these differences will enable an understanding of design issues relating to any equipment affected by the intended changes. The PTA is also used to inform any workload, human error and manual handling assessments. Examples include:</p> <ul style="list-style-type: none"> <li>• PTA for Heavy Maintenance Lifting Facility Neasden Depot</li> <li>• PTA for Ealing Common and Upminster Depots</li> <li>• PTA for Tottenham Hale Station Operations Control Facility</li> <li>• PTA for Rickmansworth Signal Control Cabin</li> <li>• PTA for Line Information Specialist at Baker Street Control Room</li> </ul>
Workload Analysis	<p>Predictive Workload Analysis helps to determine what task demands there will be on users and ensure that these demands do not exceed their capabilities. Where necessary, design changes may be required to reduce (or increase) user workload to an acceptable level. The workload assessment can also be used to support a Training Needs Analysis development. Examples include:</p> <ul style="list-style-type: none"> <li>• Signaller Workload Assessment - Rickmansworth Signal Cabin (LU)</li> <li>• Signaller Workload Assessment – Willesden Suburban Desk – Wembley Control Centre (NR)</li> <li>• Signaller Workload Assessment – Earls Court Desk – Earls Court Control Room (LU)</li> <li>• Shunter Workload Assessment – Lillie Bridge Depot (LU)</li> </ul>

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Control Room & Workstation Layout & Design	<p>This activity ensures that the physical workspace, operational / maintenance environments are designed such that they facilitate usability and are ‘fit for purpose’. This includes the assessment of control room environment, workstation design and equipment layout and includes both operational and maintainability requirements. Examples include:</p> <ul style="list-style-type: none"> <li>• Control Room Design Feasibility Study - Heathrow Terminal 5</li> <li>• Ergonomic Design of Control Room Layout – Northern Ireland Emergency Service</li> <li>• ‘Front of House’ Workstation Design - Heathrow Terminal 5</li> <li>• Training Room Layout &amp; Design VLU upgrade project</li> </ul>
Workspace Evaluations	<p>This activity is carried out in order to ensure that new equipment or systems are successfully integrated into existing working environments: Examples include:</p> <ul style="list-style-type: none"> <li>• Engineering and Heritage Train Cabs surveys for the integration of new signalling equipment.</li> <li>• Ergonomic Assessment of 120 Network Rail Signal Boxes</li> <li>• Ergonomic Assessment of Workstation Layout in Station Control Facilities</li> </ul>
Anthropometric, Operability & Maintainability Design Reviews	<p>HF design reviews ensure that the HF domains of Anthropometrics, Operability and Maintainability have been taken into consideration in the design before it is accepted. Examples include:</p> <ul style="list-style-type: none"> <li>• HF review of Depot Road, Facilities and Plant &amp; Equipment (4LM project)</li> <li>• HF review of Signalling Equipment Room Layout for Operability and Maintainability (4LM project)</li> <li>• HF review of Station Control Room Facility for Tottenham Hale Station, New Waterloo Station on York Road, Bond Street Station</li> <li>• Anthropometric Review of Tottenham Hale Station Layout for Maintenance and Operability</li> <li>• Anthropometric Review of Waterloo Station – York Road Entrance for Maintenance and Operability</li> </ul>
Human Computer Interaction & Interface Design	<p>This activity ensures that the Graphical User Interface (GUI) is designed in line with HF principles (i.e. consistency, clarity functional grouping, presentation, etc) and follows a detailed methodical approach. This activity also includes the development of an Alarms and Alerts Strategy. Issues identified are fed into a human error assessment, as input to design iterations or a Training Need Analysis. Examples include:</p> <ul style="list-style-type: none"> <li>▪ HF Alarms &amp; Alerts Strategy for the 73TS (ATC project)</li> <li>• HF Assessment of Ticketing Machine Interface Design (London Bus)</li> <li>• HF Assessment of Cab Training Instructor Operator Interface</li> </ul>
HF Assurance Report	<p>HF Assurance reports contain evidence that the HF design activities have been undertaken and that the final design is in line with HF standards and best practice. Examples include:</p> <ul style="list-style-type: none"> <li>• HF Assurance Report for Hammersmith Depot Design</li> <li>• HF Assurance Report for Tottenham Hale Station Control Facility</li> <li>• HF Assurance Report for New Waterloo Station Entrance – York Road</li> </ul>

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HF Support to Safety Case Justifications	<p>In projects involving safety critical systems it is usual to provide HF support to hazard identification and analysis workshops / review and addressing the system from a human perspective.</p> <p>Where HF issues are identified by safety reviews, close-out should be undertaken with support from HF.</p> <p><i>Note: HF is only a resource to the hazard identification and analysis workshops/ reviews.</i></p>
HF Standards	Good understanding of various HF British and Industry standards and able to advise on the appropriate standards