

## Appendix D – Ongoing Industry Supply Chain Workstreams

### Timely Supply of Material

Issue	Solution
Critical Material Supply issues - What and where are the critical material supply issues – pinch points, key components etc?	Poll TOCs to identify their key material supply issues and concerns, including their perceived reasons for the issue or problem. Identify next steps to overcome any identified issues or problems.
Supply & Demand – material supply for planned requirements perceived to be generally ok, but contingency material supply for unplanned requirements is often problematic, including seasonal factors (Levels 1-5). Suppliers sometimes struggle to meet volatile demand.	Poll TOCs to identify problem areas. Review and agree the contingency strategy requirements with the supply base.
Material Requirements Planning – What is a best practice model for customers and suppliers to adopt for forecasting, ordering and supplying material?	Define and update the 20PP to include a model that takes account of customer consumption (planned & unplanned) forecasting, leading to proactive order placement & timely supply, taking consideration of lead times. Organisations can then self-check against this model.
Stock on Shelf – How are minimum stock holding levels defined, e.g. BSI auto-couplers?	Decision criteria need to be understood, to ensure they reflect demand requirements for the industry as well as individual users. Problem areas need to be identified. Could the Network Rail performance fund be used to acquire additional material to address known shortages of common spares floats?
Dirty / Clean Status of Float Material – Concern that current supply arrangements do not always promote the stocking of clean (usable) and available float material on the shelf at suppliers. Poor component return condition can also inhibit this.	The industry needs to adopt an approach that maximises the usability of available float material (for which there is a demand).
Making Best Use of Small Material Floats – How can small material floats be used most effectively? e.g. minimising float turnaround timescales or standardising and combining similar floats where possible.	Identify ‘small float’ problem areas, review their utilisation, as a basis for recommending a way forward, both on a specific component basis and in terms of general best practice principles

Management of 'rogue' components (repeat offenders)

Issue	Solution
<p>Providing Consistent Defect Information to Suppliers – How can component failure information be robustly and consistently provided to suppliers, to maximise the chances of successful defect root cause diagnosis? Reporting and warranty return requirements between suppliers are different, and TOC approaches are also different.</p>	<p>Develop a generic template or checklist (drawing on current best practice from newbuild and legacy fleets) for inclusion in the 20PP to enable the industry to adopt a more consistent approach for defect reporting across the TOC/ROSCO/Supplier interfaces.</p>
<p>Defect investigations on components out of warranty – Some suppliers do not investigate defects occurring on products out of warranty. Valuable information and knowledge is at risk of being lost, and the risk of keeping defective components within the supply chain is also increased.</p>	<p>Suppliers to ensure their defect investigation processes are not dismissive of components failing outside their warranty period.</p>
<p>NFF at suppliers is excessively high – This denudes float during the fault finding process, and increases the risk that defective products might be re-fitted to vehicles. More prevalent on safety systems where precautionary changeout often takes place. Concern that TOCs are not always aware of intelligence held by suppliers of product performance, and that TOCs do not always take full advantage of fault finding with a component in-situ.</p>	<p>Poll Suppliers to identify which components have high NFF rates.</p> <p>Use these components as case studies to work through jointly between TOCs and suppliers to better understand each issue, and to ensure TOC and supplier fault finding processes are aligned and supportive of each other. Suggest beginning with new-build OEMs, and then extend later to legacy fleets.</p> <p>Use the output of this as the basis for an industry best-practice model to be included in the 20PP.</p>
<p>Serial Number Tracking – Concern that serial number tracking is not being used as effectively as it could be for managing NFFs.</p>	<p>To be considered as part of above NFF case study review.</p>

## Configuration

Issue	Solution
<p>The industry needs a robust configuration base – Different stakeholders have different pieces of the configuration base and it is important for this to be consolidated somehow. It is important to define what is meant by configuration i.e. drawing, specifications, modification status</p>	<p>ROSCOs need to be responsible for vehicle configuration history and ensure it is updated to reflect changes made during heavy maintenance and enhancement programmes. TOCs must also provide ROSCOs with comprehensive and accurate configuration information for all changes made during their lease. The Supply base needs to have a robust view at component and product level.</p>
<p>Responsibilities for component and specification information – Components and specifications need a responsible owner, this can be especially unclear in relation to older vehicles.</p>	<p>Each component and specification needs to have a defined ‘responsible owner’, to provide a means for keeping configuration information up to date.</p>
<p>Linkage between overhaul periodicities and component duty cycles – There is no defined link between the specification of a component’s duty cycle, the extent to which duty-cycle is re-based lined by the COI, and the prescribed use of a component within a vehicle overhaul specification (which also don’t define the vehicle overhaul periodicity). This could lead to the incorrect management of component condition.</p>	<p>Component specification information needs to include details about duty cycle limitations of the component. The overhaul periodicity which is associated with vehicle overhaul instructions (VOIs) needs to be visible to suppliers (not always included in VOI).</p>
<p>Making component and specification information available to relevant stakeholders within the industry – PADS is used to an extent, but has recently had an upgrade, making it more user friendly and accessible via the internet. Some fleets use alternative systems to PADS, but the principle of enabling stakeholder access to information should be similar. Porterbrook is implementing a document tree initiative in PADS to link primary fleet overhaul documentation to COIs, components and drawings; this concept could be of use to other organizations.</p>	<p>The recent functionality enhancements of PADS need to be made aware to the industry. There may be a value to the industry increasing its use and adoption of PADS, where this is appropriate, to provide a consolidated configuration base. Porterbrook’s document tree initiative to be explained, as a tool for supporting the enhancement of document control. Could non-PADS fleets ghost their information into PADS to create a single reference source? Could the Network Rail performance fund be used to support some of these initiatives?</p>

<p>Integrity of PADS component information – Need to ensure that PADS contains correct component information, for example mod status, QA rating. Some older components are very sketchy on detail, and in some cases drawings and/or specifications do not even exist.</p>	<p>Deficiencies of component information/detail need to be addressed by the 'responsible owner'. A review is needed, to understand the scale of this issue.</p> <p>Confirm that QA ratings in PADS agree with ACOP standards.</p> <p>Confirm PADS has the ability to store component mod status</p> <p>Need to ensure that the processing of part number information and associated detail in PADS has engineering input and is not purely an administrative activity.</p>
<p>Changes to the configuration base need to be well managed – Management of change to configuration, particularly between multiple stake-holders, needs to be carefully controlled and managed. The current industry approach appears to be varied in its application, and not fully joined up.</p>	<p>Review application of change management at organisations where this is perceived to be undertaken well (e.g. Siemens for Desiro)</p> <p>Use this as the basis for prescribing a best practice model against which organisations can self-check.</p> <p>The effectiveness of existing ACOP guidelines needs to be tested.</p>
<p>Software/Firmware management – A consistent industry approach is needed for software/firmware management including mod strike/configuration recording methodology &amp; ESCROW considerations. There is a perception that an education gap exists in some areas of the industry with respect to software/firmware management, and support may be required to close this gap. There is best practice which can be learnt, for example software for Desiro component hardware is not installed until the point of vehicle fitment, and component mod strike status is for hardware only (software is handled separately).</p>	<p>Review the application of software management at organisations where this is perceived to be undertaken well (e.g. Siemens for Desiro)</p> <p>Use this as the basis for prescribing a best practice model against which organisations can self-check.</p> <p>Seek advice from outside the industry as well if necessary.</p> <p>Method for raising awareness throughout the industry of software/firmware management principles to be considered.</p> <p>Poll TOCs to seek their views on whether any problems are perceived to exist with ESCROW management.</p>
<p>How can industry-wide approvals be made slicker and more effective? – The approval of industry-wide procedures or common component enhancements is extremely time-consuming and problematic. It is difficult for suppliers to implement a revised procedure until all stakeholders have signed it off, resulting in stakeholders who have signed-off a procedure becoming frustrated that it hasn't been implemented during the period of the approval process.</p>	<p>A more effective industry-wide process is needed for approval of common procedures or common product upgrades. The effectiveness of ACOP guidelines needs to be tested. Suggest progressing via existing cross-industry forum e.g. TSRG?</p>

<p>Responsibilities for updating configuration information – when a change is made, the update of drawings and documentation can sometimes be problematic</p>	<p>The process and responsibilities for updating configuration information following a change needs to be defined and briefed to the industry. There is recognition that no one party necessarily has an overriding responsibility.</p>
<p>Sharing best practice – Product performance and consistency of product configuration would benefit if the industry shared product development information across similar systems on different fleets.</p>	<p>A partnership approach, respecting commercial boundaries, should be promoted where possible.</p>