Standard Category 1

S1044 Asset Risk Standard

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1 Purpose

1.1 The purpose of this standard is to ensure that decisions on asset risk are made in a consistent and transparent manner and to demonstrate this is aligned to LU's enterprise wide risk management system.

1.2 The objectives for asset risk management in LU are that:

a) There is an organisation-wide risk management process to support efficient and effective delivery of Asset Management objectives.

b) Responsibility for ownership and management of asset risk and related activities is clearly defined.

c) All significant risks impacting the organisation have mitigating strategies and owners against which performance can be measured.

d) Disclosure of issues or concerns is required to facilitate an accurate understanding of LU's asset risk profile so that timely and appropriate action can be agreed and implemented as necessary

e) Accurate risk information is provided to support the development of the Line Asset Network Plan (LANP) whole life asset plans, inform and challenge asset maintenance regimes and support development of accurate whole life cost models.

f) The appropriate balance between asset performance, cost and risk is achieved and decisions are made with a clear understanding of the impact of constrained funding on asset risk.

g) The impact of constraints in Capital and/or Operating expenditure on asset risk is understood.

2 Scope

2.1 This Standard applies to LU and Suppliers, in the consideration of risks to asset performance, condition and safety.

2.2 Project risk is addressed through Pathway.

2.3 Civils risks are assessed using STRATA, see standard Process for Managing Civils Risk- G1235.

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3 Requirements

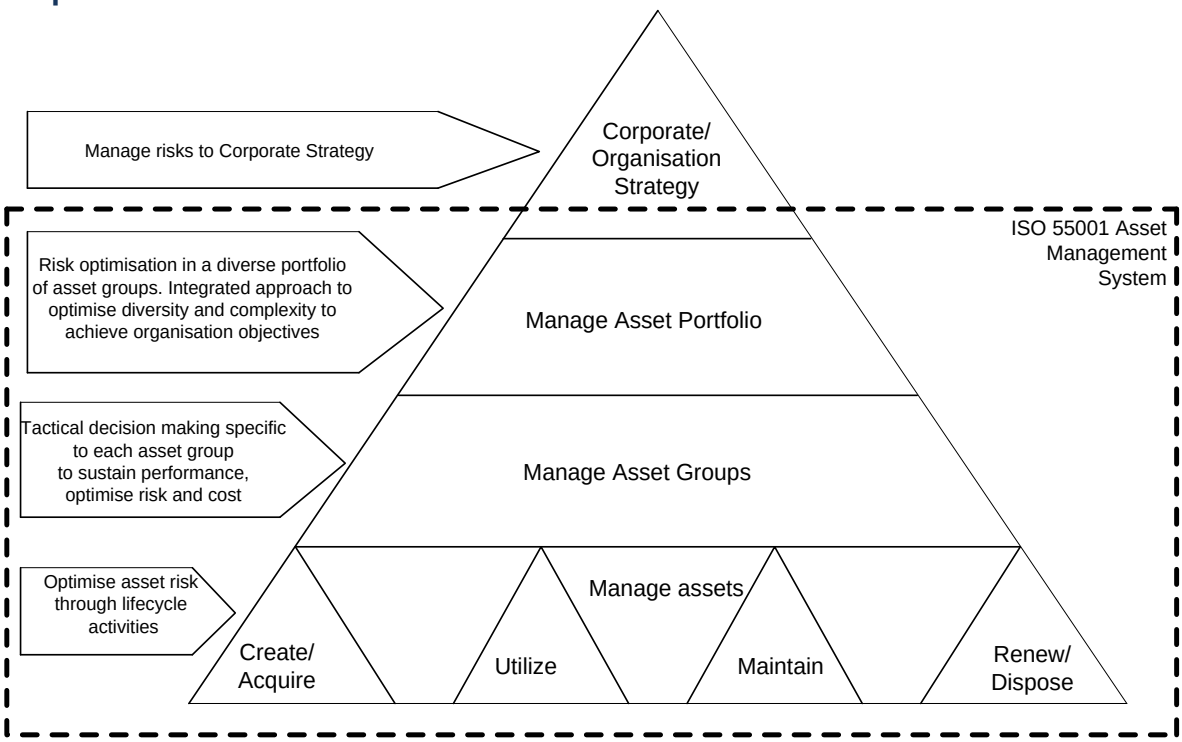

Fig.1 shows line of sight between asset risk and the risk to LU corporate objectives.

3.1 The risk process shall use quantitative measures to:

a) Assess potential impacts on asset performance and management including maintenance regimes;

b) Integrate condition assessment information into overall risk assessments;

c) Assess the impact of 3.1 a) and 3.1 b) on safety of assets during routine operations

d) Assess the impact of 3.1 a) and 3.1 b) on delivery of business objectives

e) Enable consistent ranking and prioritisation of risks so that they are managed within LU's chosen asset risk profile

f) Capture the impact of changes to the risk profile that result from constrained (or unconstrained) funding scenarios.

4 Process Description

4.1 General

4.1.1 All asset risk data shall be held in a local risk register by COO directorates in MS Excel spreadsheet format. The register shall be used to inform and challenge:

i. Asset maintenance regimes.

ii. Whole life asset management strategies.

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iii. Asset investment decisions

4.1.2 Risk information may be entered from all relevant sources including empirical data from maintenance management and asset management software systems (currently Ellipse and Maximo)

4.1.3 Appendix 1 illustrates the process methodology adopted in managing asset risk.

4.1.4 Appendix 2 shows the regular risk reporting process and integration between operational and asset management activities.

4.2 Identify Risk

4.2.1 Risk data shall be identified and recorded in the local risk register based on the following criteria:

a) Asset safety and performance-related risks.
b) Asset condition related risks may be identified from the ACR and shall be classified based on functional codes detailed in the Asset Condition Reporting Standard S1042:
   i) Code 1 – assets where a statutory non-compliance exists
   ii) Code 2 – assets where a safety risk exists and must be mitigated to ALARP.
   iii) Code 3 – assets that require an extraordinary maintenance or operational regime which is uneconomic or unsustainable long-term.
   iv) Code 4 – assets which have a risk of failure generating performance loss.
c) Risks associated with third party arrangements (see Appendix 3)
d) Obsolescence Risks

4.2.2 For each asset area, a person in AP shall be assigned to own the local risk register, be responsible for its upkeep (unless otherwise agreed with the Asset Manager (S&SD)), and shall inform the Asset Manager (S&SD) and the Operational Risk Manager of newly identified risks.

4.2.3 Obsolescence risks shall be referred to the Obsolescence Manager for review before entering in to the risk register considering commercial / contractual and technical / engineering concerns.

4.2.4 Civils risk shall also consider the impact of external parties on assets including developments adjacent to the railway, vehicle incursion and other matters relevant to infrastructure protection.

4.2.5 Risks shall be reviewed and validated (or rejected) in consultation with the Head of Asset (AP), the Head of Profession and the Asset Manager (S&SD).

4.3 Assess & Evaluate Risk

4.3.1 All risks shall be scored initially using the standard matrix as shown in Appendix 4. Asset risk shall be assessed in terms of its impact on:

a) Safety
b) Cost (measured in terms of asset availability or operability, i.e. performance or service loss, additional maintenance or operational cost etc.)

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c) Reputation

4.3.2 The owner of the local risk register shall ensure all entries are approved (or validated) and quantified, according to a risk score based on the consequence matrices (Appendix 4). Where a single risk has multiple impacts, risk treatment and/or escalation shall be prioritised based on the highest risk impact.

4.3.3 Where a risk is common to multiple similar assets or locations, this should be treated as a single risk. Risk treatment and/or escalation shall be based on the aggregate impact of all the instances.

4.3.4 Where an asset risk has a cross-asset impact, the Asset Manager (S&SD) and AP representative for both asset areas shall jointly ensure the risk is clearly understood and the root cause is agreed to enable effective planning for risk mitigation. If agreement cannot be reached, the risk escalation process shall be followed (refer Para. 4.5.4)

4.3.5 AP representative for the asset area in which the root cause of a cross asset risk resides shall be identified as the risk owner and shall record the risk in the risk register. This person shall also bear the cost of managing the risk.

4.3.6 AP representative identified as the owner of a cross-asset risk shall be responsible for communicating risk mitigation updates to the impacted parties. The Asset Manager (S&SD) impacted by a cross asset risk may record qualitative risk information in the risk register to maintain a complete log of risk information, but quantitative assessment shall only be completed by the asset risk owner.

4.3.7 **Risks with a score ≥ 8** – these risks will be loaded into ARM and the Asset Manager (S&SD) shall validate the score in consultation with AP and the Operational Risk Manager. These risks shall then be re-assessed and re-rated using the COO scoring scheme (Appendix 5)

4.3.8 All risks in 4.3.7 above which are project-related shall be rated using Pathway

4.3.9 The Asset Manager (S&SD) in conjunction with the Head of Profession shall validate the score for safety risks escalated to ARM using S1521 Safety Decision Making and S1526 Assessment and Management of Health, Safety and Environmental Risk as appropriate.

4.3.10 The Asset Manager (S&SD), with support provided from the Operational Risk Manager, shall be accountable for recording and updating risks in ARM.

4.3.11 Risk evaluation in ARM includes an assessment of the financial impact carried out by the Asset Manager (S&SD) in conjunction with the Head of Asset (AP). The financial impact shall be quantified over the Business Plan period or the life of the asset, whichever is shorter. Where the risk will be mitigated by a rolling annual programme, the financial impact shall be spread pro-rata over the life of the Business Plan.

4.3.12 The cost impact of safety and condition related risks escalated to ARM shall be based on ACR quantification. The Deliverer (Head of Asset (AP) or Project Manager CPD) shall outline risk mitigation options proposed for all risks and the Asset

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Manager (S&SD) shall update ARM accordingly with support from the Operational Risk Manager.

4.3.13 The Asset Manager (S&SD) shall present the outline options to the regular Asset Performance Review Meeting for approval. A separate meeting is held for each asset class on a quarterly basis (QASM) and an 8-weekly basis for power assets.

4.3.14 The Asset Manager (S&SD), with support from the Operational Risk Manager, shall ensure ARM is updated in accordance with the mitigation options agreed at the PPRM periodic review by AP or at the QASM.

4.3.15 The Asset Manager (S&SD) shall ensure the preferred option for risk mitigation is reflected in the Line Asset Network Plan (LANP).

4.3.16 Options for inclusion and review in the Business Planning cycle are:

a) Option A: Address through existing control processes (Business as Usual), i.e. Accept and Monitor through maintenance (AP)
b) Option B: Address via an enhanced maintenance regime in consultation with Asset and Operations Support; this applies to assets classed Code 3 and require extraordinary maintenance or operational regime which may be uneconomic or unsustainable long-term.
c) Option C: Address via a major business intervention (Capex solution) – may be obtained from CAPEX or operational budgets.

4.4 Manage Risks

4.4.1 The Asset Manager (S&SD), in conjunction with the Head of Asset (AP), shall ensure that the option approved by the Asset Strategy Meeting and recorded in the Line Asset Network Plan (LANP) is implemented.

4.4.2 If Option B (Enhanced Regimes) is chosen, the Asset Manager (S&SD) shall ensure that the Deliverer (AP) decides one or more of the following methods:

a) Contain the risk through enhanced monitoring or maintenance interventions;
b) Control the risk by approved revisions to procedure.

4.4.3 The Head of Profession shall determine whether the level of safety risk exposure is acceptable in accordance with LU Category 1 standard S1521 Safety Decision Making.

4.4.4 The Head of Profession shall liaise with LU Health, Safety and Environmental (LU HSE) team to determine whether the risk control measures (planned or existing) are sufficient to maintain safety risks at a tolerable level.

4.4.5 Where Option C is not planned for the immediate future, the Asset Manager (S&SD), in collaboration with the Deliverer (Head of Asset (AP)) shall propose mitigation activities to manage the risk within tolerable levels. In addition, the Asset Manager (S&SD) shall liaise with the Head of Asset (AP) and the Head of Profession to determine the sustainability of enhanced regimes, life extension activities and/or the timing of planned capital investment.

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