

Summary of ongoing developmental areas

The following paragraphs show where work is still required to complete and document the safety cases and form part of the IPT's Safety Programme Plan.

1. Tornado Safety Case

- a. Extension of the safety case to include the operation of development aircraft under MOD regulation and control, export and lease arrangements and flying on operations. (Goal 0)
- b. Definition of objective safety targets (Goal 0)
- c. Completion and confirmation of adequacy of management system references (Goals 112, 112111/112121/112131, 112112/112122/112132, 11223, 11225, 1123, 6521, 6522, 6523 & 6524)
- d. Definition of AGE and GFE standards (Goal 1121)
- e. Justification that AGE and GFE production standards were managed with appropriate safety (Goals 11214 and 11215)
- f. Finalisation of RTS and ADS safety cases (Goals 111, 113 and 114)
- g. Confirmation of capture/communication of production hazards (Goal 1162)
- h. Confirmation of capture/communication of configuration change hazards (Goal 1163)
- i. Development of Contractor Hazard Log (Goal 1163)
- j. Justification that anomalies of as-flown configuration are investigated and communicated (Goal 11631)
- k. Development of Tornado Hazard Management System (Goal 11651)
- l. Definition of rigs (Goal 121)
- m. Definition of simulators (Goal 122)
- n. Identification of CSAs for control of Simulator configurations (Goal 122)
- o. Definition of Training Aids (Goal 123)
- p. Confirmation of relevance of AP100A-01 Leaflet 171 (Goal123)
- q. Justification that aircrew and ground crew selection, training and postings are appropriately managed (Goal 221)
- r. Establish and document AOA personnel management arrangements (Goal 222)
- s. Identification of line management oversight arrangements for RAF and civilian personnel (Goals 2241 and 2242)
- t. Definition of HR and Welfare systems (Goal 2242)

- u. Definition of manning and complementing arrangements (Goal 225)
- v. Definition of Tactics/Doctrine Manuals (Goal 2261)
- w. Definition of Group/Unit Quality Management Systems (Goal 2262)
- x. Confirmation of relevance of GASOs in support of flying orders and authorisations (Goal 231)
- y. Justification that obsolescence is effectively managed (Goal 2341)
- z. Documentation of Query answering support arrangements (Goal 234)
- aa. Identification of DG Munitions and DOSG support relationships (Goal 23421)
- bb. Documentation of Life Extension Working Group Arrangements (Goal 23422)
- cc. Document arrangements for independent assessment of software (Goal 23423)
- dd. Document DSTL support arrangements (Goal 2342)
- ee. Document Tornado User Working Group arrangements (Goal 235)
- ff. Document procedures for SFS, Defect reports/investigations, Incident/Accident reports, ambiguity reports and Boards Of Inquiry (Goal 24)
- gg. Document findings of Environmental Impact Assessment (Goals 343 & 344)
- hh. Complete TESMP Annex U and validate Topic 2(R)1 content on hazardous materials (Goals 344 & 345)
- ii. Justification that Operating Base Infrastructure supports safe use of weapon system (Goal 35)
- jj. Identification of receipt and processing of annual DASC safety statistics (Goal 413)
- kk. Identification of AOA safety analysis procedure (Goal 413)
- ll. Document IPT and TSMP safety review process (Goal 413)
- mm. Capture of references to DASC and BAES safety analyses and statistics and construction of clear audit trail (Goal 414)
- nn. Justification that Tri-national support arrangements continue to comply with UK regulatory requirements and needs (Goals 512 and 513)
- oo. Completion of Annex D of TESMP (identification of IBAs/CSAs) (Goal 61)
- pp. Documentation of arrangements for all safety management fora (Goal 61)
- qq. Identify and record DASC safety management system (Goal 641)
- rr. Identify and document RTSA, AOA and Front Line Command hazard management systems (Goal 641)
- ss. Document processes for interchange of hazard information between project stakeholders (Goals 6411/6421 & 6422)

tt. Identification of management and maintenance of contingency provisions (Goal 662)

2. MAR Safety Case

- a. Capture controlled copy of RTSA Safety Management Plan for IPT safety audit trail purposes (Goal R0)
- b. Develop top-level safety definition and project targets (Goal R0)
- c. Justification for safety of SDs (Goal R1)
- d. Justification for safety of Aircrew Publications (Goal R2)
- e. Identification of the IPT/RTSA CSA (Goal 0)
- f. Establishment of RTSA safety targets and criteria relevant to MAR (Goal 0)
- g. Definition of LITS role in management of as flown and permissible design standards (Goal 11)
- h. Identification of procedures for control of non-Tornado configuration controlled items (Goal 1112)
- i. Identification and documentation of outstanding process references (Goal 111213)
- j. Clarification of references of Aircraft DDP supplements (Goal 1112131)
- k. Identification of agreements, processes and practice for maintenance of project records (NAMMA/NETMA, IPT/PONO/NDAAR and designer) (Goal 1112133)
- l. Issue of a management guide on MAR amendments (Goal 1122)
- m. Completion of TESMP Annex D to identify inter-IPT management arrangements (Goals 111221/11211,1333/141, 31, 421, 42214, 4253)
- n. Definition of configuration management arrangements for ground systems (Goal 121)
- o. Definition of MAGERD procedures, approvals and records (Goal 122)
- p. Definition of GPGSE management arrangements (Goal 123)
- q. Justification that test facilities are appropriately safe (Goal 124)
- r. Justification that planning aids are appropriately safe (Goal 125)
- s. Justification that Ground Test Software is appropriately safe (Goal 126)
- t. Justification that Miscellaneous Ground support items are appropriately safe (Goal 127)
- u. Justification that technical publications are appropriately safe (Goal 128)
- v. Justification that ground system contractor activities are co-ordinated with those of the air vehicle contractor (Goal 131)
- w. Justification that the compatibility and effectiveness of the ground systems is evaluated (Goal 132)

- x. Identification of management audit, reporting and control arrangements (Goal 1331)
- y. Identification of arrangements for through-life maintenance of MoD T&E evidence (Goal 2122)
- z. Identification of criteria for MAR assessment and recommendations (Goal 2122)
- aa. Validate assumption that effective arrangements are in place for effective dissemination of GFE and GPGSE information (Goal 31)
- bb. Confirmation of relevance of Topics 4, 8 and 13 to Tornado (Goal 313)
- cc. Confirmation of STF removal from MAR (Goal 323)
- dd. Justification that individual Engineering APs are safe (Goal 3321)
- ee. Justification that hazards are identified and communicated (Goal 3323)
- ff. Justification that SOIU is fully representative of operational usage and practice (Goal 333)
- gg. Identification of safety case management process (Goals 4111 & 4222)
- hh. Identification of Safety Programme Plan reference (Goal 4122)
- ii. Identification of Eng Pol oversight arrangements (Goal 4132)
- jj. Identification of arrangements for Independent Safety Audit (Goal 4132)
- kk. Confirmation that effective inter-IPT change controls are in place (Goal 421)
- ll. Identification of contractor procedures and working arrangements (Goal 42211)
- mm. Confirmation that all IBAs/CSAs are in place and effectively maintained (Goal 42214)
- nn. Evidence that the hazard management system is available to and embraces all stakeholders (Goal 4222)
- oo. Confirmation that LI BS 005 fully covers the needs for a MAR document control system (Goal 4223)
- pp. Confirmation that robust back-up data management arrangements exist (Goal 4224)
- qq. Documentation of ADS safety case (Goal 424)
- rr. Confirmation that IBAs/CSAs with other IPTs define the responsibilities for initiation and maintenance of safety cases (Goal 4253)
- ss. Documentation of MAR Audit Tool and operating procedures and controls (Goal 4254)
- tt. Identification of TSMP process for safety reviews (Goal 53)