

Draft Safety Plan MOSTAR and TUZLA ILSs

Item nber	Safety case argument reference	Evidence/reference to be provided/produced	Person/team responsible	Review and approval	Target date for completion
1	Justification Reason for implementing the change.	Proposed text: "To implement Instrument Landing System allowing lower operational minima than currently available"			
2	Context May include a statement which limits the scope of an Argument in some way.	Mostar: topography constraints Tuzla: no topographic constraints			
3	Operational concept What is required: Users' needs, high level requirements, scope	-Workload for pilots -Acft categories landing (Mostar Cand D, Tuzla all categories) -Support regional economical development efficient manner			
4	CONOPS How system will be used	Reference to detailed procedures - Tuzla as per ICAO Annex 10 - DOC4444), Doc 8168 - Mostar describe differences with ICAO SARPS and provide justification of acceptability of the modified concept (reference to similar implementations and reference to mitigations defined in this SC) - Local instructions - Maintenance procedures			
5	Safety criteria Rationale for using relative or quantitative criteria and AFARP	In the case of Mostar & Tuzla ILS only relative & AFARP (no Target Level of Safety - TLS)			

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6	Assumptions Statements made à priori that will have to be demonstrated	(ultimately) list of assumptions <u>Comparative table of assumptions</u>			To be produced as activities develop
7	ArgO Top Claim what has to be proven as safe	Proposed text: "ILS CAT I and DME operations will be acceptably safe"			
2	(Agr 1) Arg 1.1 Description of the Operational concept	<u>Comparative table NPA vs ILS of what the 2 systems do (e.g. vertical guidance)</u>			
3	(Agr 1) Arg 1.2 Description of current operations and planned operations	to be finalised (reference to documents can be made- inclusion of maps, from V. Juric presentation in SC acceptable)			
4	(Agr 1) Arg 1.3 Identification (and listing of) of impact on Operational environment	Describe gap between current and future environment <ul style="list-style-type: none"> <li>• Technical (e.g. shelters location, new competences, flight calibrations, et.),</li> <li>• Operations (e.g. training needs, handling of new equipment, pilot awareness, etc.)</li> </ul>			
5	(Agr 1) Arg 1.4 Functionality and performance	Reference to supplier's specifications and mapping with ICAO Annex 10 requirements <u>Comparative table of functions and performances</u>			
6	(Arg 2) Arg 2.1 Design completeness- Arg 2.1.1 Boundaries of system defined.	ILS synoptic can do with a line showing limits and interfaces identified  Manufacturer technical offer	Manufacturer		

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7	(Arg 2) Arg 2.1 Design completeness- Arg 2.1.2 CONOPS adaptation to design and validation of procedures	User consultation evidence <u>Comparative table (e.g. workload)</u>			
8	(Arg 2) Arg 2.1 Design completeness— Arg 2.1.3 List of all necessary Equipment-Procedures-Human (airspace) requirements	<ul style="list-style-type: none"> <li>• Flight procedures</li> <li>• Local instructions</li> <li>• Maintenance procedures</li> <li>• Airport marking-signage</li> <li>• Driver licence</li> <li>• Training plans</li> </ul>			
9	(Arg 2) Arg 2.1 Design completeness – Arg 2.1.4 Safety requirements and assumptions captured	List of safety requirements and assumptions updated			
10	(Arg 2) Arg 2.1 Design completeness – Arg 2.1.5 Safety requirements are realistic	Mostar: reference to other places (e.g. Aosta) -- Other references or experience			
11	(Arg 2) Arg 2.2 Design correctness – Arg 2.2.1 Internal coherency	Reference FAT report & doc 8072,			
12	(Arg 2) Arg 2.2 Design correctness – Arg 2.2.2 Normal conditions behaviour	Reference FAT report & doc 8072,			
13	(Arg 2) Arg 2.3 Design robustness- Arg 2.3.1 Reaction to external failures	FHA-PSSA session to identify external failure (likelihood and severity) in relation to boundaries of system			

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		Manufacturer to provide robustness study (e.g. power supply voltage surge) <u>Comparative table of robustness to external failures</u>			
14	(Arg 2) Arg 2.3 Design robustness- Arg 2.3.2 Reaction to abnormal conditions	Manufacturer to provide robustness study (e.g. weather, earthquake) <u>Comparative table of abnormal conditions of operations</u>			
15	(Arg 2) Arg 2.4 Mitigation of internal failures- Arg 2.4.1 Identification of hazards	FHA-PSSA session to identify internal failures.  Manufacturer to provide FHA-PSSA (left part of the bow-tie)  Backing evidence SAM applied <u>Comparative table of hazards</u>			
16	(Arg 2) Arg 2.4 Mitigation of internal failures- Arg 2.4.2 Severity of the effect of hazard on aircraft and occupants assessed	FHA-PSSA session to assess severity of effects of hazards  Backing evidence list of experts participating Backing evidence SAM applied <u>Comparative table of severity of hazard effects</u>			
17	(Arg 2) Arg 2.4 Mitigation of internal failures- Arg 2.4.3 Causes identified FHA-PSSA session to identify causes for internal failure	Backing evidence SAM applied Manufacturer to provide FHA (left part of the bow-tie)			
18	(Arg 2) Arg 2.4 Mitigation of internal failures- Arg 2.4.4 Safety requirements (mitigations) identified/designed	FHA-PSSA session to identify mitigations for internal failure as required Backing evidence SAM applied			

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19	(Arg 2) Arg 2.4 Mitigation of internal failures- Arg 2.4.5 Risk (remaining) for each hazard assessed, risks for hazards aggregated	FHA-PSSA experts to produce aggregated risks Backing evidence SAM applied			
20	(Arg 3) Implementation Arg 3.1 Local impact	Site survey report (WGS84 study)			
21	(Arg 3) Implementation Arg 3.2 System integration	-Civil works (compliance with ICAO and manufacturer recommendations) - compliance with ICAO doc 8072 -SLAs as required -Reference to SAT report results -Flight checks/calibration (special test protocol for Mostar)			
22	(Arg 3) Implementation Arg 3.3 Training delivered	Direct evidence: training records Backing evidence: training objectives, teaching aids, training results measurement			
23	(Arg 4) Migration Arg 4.1 Hazards associated with the migration have been identified	FHA session to identify these hazards (basis migration plan)			
24	(Arg 4) Migration Arg 4.2 deployment of Migration Plan	AIP publication of new procedures Roasters' changes and shadow ops			
25	(Arg 4) Migration Arg 4.3 Mitigation measures	FHA-PSSA session to identify mitigations			

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26	(Arg 4) Migration Arg 4.4 Contingency measures	Conditions to return to NPA			
27	(Arg 5) Operations and maintenance will continue to be safe Arg 5.1 Reporting	Rely on SMS reporting procedures plus specific reporting requirements temporary and/or permanent(both OPS and Tech) Define end of specific measures criteria			
28	(Arg 5) Operations and maintenance will continue to be safe Arg 5.2 Remedial actions	If need for urgent action- describe crisis cell- multidisciplinary team- composition and powers to react			
29	(Arg 5) Operations and maintenance will continue to be safe Arg 5.3 Surveys	Describe survey plans to verify assumptions as well as detect other issues-including pilots, ATCOs and ATSEPs feedback ICAO 1 year of operations consolidation			