

Table A-1: Applicability matrix based on software criticality

Clause	Description	D	Tailoring	Notes
5	Software product assurance programme implementation	-		
5.1	Organization and responsibility	-		
5.1.1	Organization	Y	Y	
5.1.2	Responsibility and authority	-		
5.1.2.1		Y	Y	Given that (1) the FAQAS framework is not in-flight software and (2) the development team is limited in number, we aim to reduce the effort dedicated to reporting about the development and quality process structure.
5.1.2.2		Y	N	See 5.1.2.1
5.1.2.3		Y	N	See 5.1.2.1
5.1.3	Resources	-		
5.1.3.1		Y	Y	See 5.1.2.1
5.1.3.2		N	N	
5.1.4	Software product assurance manager/engineer	-		
5.1.4.1		Y	N	See 5.1.2.1
5.1.4.2		Y	N	See 5.1.2.1
5.1.5	Training	-		
5.1.5.1		Expected output not required	N	
5.1.5.2		N	N	
5.1.5.3		Y	Y	
5.1.5.4		Y	Y	
5.2	Software product assurance programme management	-		
5.2.1	Software product assurance planning and control	-		

Clause	Description	D	Tailoring	Notes
5.2.1.1		Y	Y	The development process has been depicted at a high level in the ITT proposal and in response to the points of this document. Given that (1) the FAQAS framework is not in-flight software and (2) the development team is limited in number, we aim to reduce the effort dedicated to reporting about the software engineering and maintenance processes.
5.2.1.2		Y	N	See 5.2.1.1.
5.2.1.3		Y	N	See 5.2.1.1.
5.2.1.4		Y	N	See 5.2.1.1.
5.2.1.5		Y	N	See 5.2.1.1.
5.2.2	Software product assurance reporting	-		
5.2.2.1		Y	N	Does not apply because this item matches the review activities focussing on project deliverables D4 and D5.
5.2.2.2		Y	N	See 5.2.2.1
5.2.2.3		Y	N	See 5.2.2.1
5.2.3	Audits	Audits planned and performed only when necessary	N	Since the framework is an engineering toolset not to be deployed on the operational ground or in-flight software we do not perform additional quality assurance activities such as auditing, controlling and planning.

Clause	Description	D	Tailoring	Notes
5.2.4	Alerts	Y	N	Does not apply because the FAQAS framework is a support tool that does not require integration with the operation environment. For this reason, we do not foresee the need for operational testing, support and problem handling.
5.2.5	Software problems	-		
5.2.5.1		Y	N	See 5.2.4
5.2.5.2		Y	N	See 5.2.4
5.2.5.3		Y	N	See 5.2.4
5.2.5.4		Y	N	See 5.2.4
5.2.6	Nonconformances	-		
5.2.6.1		Y	N	Assistance will be provided through GITLAB issue tracker.
5.2.6.2		Y	N	See 5.2.6.1
5.2.7	Quality requirements and quality models	-		
5.2.7.1		Y	N	
5.2.7.2		Relevant characteristics only (e.g. suitability for safety is not relevant for cat. D software)	N	
5.3	Risk management and critical item control	-		
5.3.1	Risk management	Y	N	Risk management will follow the indications provided in this response to TEC comments and no further documentation is foreseen.
5.3.2	Critical item control	-		
5.3.2.1		Y	N	See 5.2.3
5.3.2.2		Y	N	See 5.2.3
5.4	Supplier selection and control	-		
5.4.1	Supplier selection	-		

Clause	Description	D	Tailoring	Notes
5.4.1.1		Expected output not required	N	
5.4.1.2		Y	N	Does not apply because the list of potential third-party software products to be integrated in the FAQAS framework has been provided in the ITT proposal and will be discussed in deliverable D2.
5.4.2	Supplier requirements	-		
5.4.2.1		Y	N	Next level suppliers are not foreseen in this project
5.4.2.2		N	N	
5.4.3	Supplier monitoring	-		
5.4.3.1		Y	N	See 5.4.2.1
5.4.3.2		Y	N	See 5.4.2.1
5.4.3.3		Y	N	See 5.4.2.1
5.4.3.4		N	N	
5.4.4	Criticality classification	Y	N	See 5.4.2.1
5.5	Procurement	-		
5.5.1	Procurement documents	Y	N	Does not apply because the list of potential third-party software products to be integrated in the FAQAS framework has been provided in the ITT proposal and will be discussed in deliverable D2.
5.5.2	Review of procured software component list	Y	N	See 5.5.1
5.5.3	Procurement details	Y	N	See 5.5.1
5.5.4	Identification	Y	N	See 5.5.1
5.5.5	Inspection	Y	N	See 5.5.1
5.5.6	Exportability	Y	N	See 5.5.1
5.6	Tools and supporting environment	-		
5.6.1	Methods and tools			

Clause	Description	D	Tailoring	Notes
5.6.1.1		The proposed methods and tools shall have been successfully used at least in one project before (possibly a non-space project)	Y	
5.6.1.2		Expected output not required	N	
5.6.1.3		Expected output not required	N	
5.6.2	Development environment selection	-		
5.6.2.1		Expected output not required	N	
5.6.2.2		Expected output not required	N	
5.6.2.3		Y	N	See 5.2.1.1
5.7	Assessment and improvement process	-		
5.7.1	Process assessment	N	N	
5.7.2	Assessment process	-		
5.7.2.1		N	N	
5.7.2.2		N	N	
5.7.2.3		N	N	
5.7.2.4		N	N	
5.7.3	Process improvement	-		
5.7.3.1		N	N	
5.7.3.2		N	N	
5.7.3.3		N	N	
6	Software process assurance	-		
6.1	Software development life cycle	-		
6.1.1	Life cycle definition	Y	Y	See 5.2.1.1.
6.1.2	Quality objectives	Y	N	See 5.2.1.1.
6.1.3	Life cycle definition review	Y	N	The review of documents is part of the milestone review process for the FAQAS activity.
6.1.4	Life cycle resources	Y	N	See 6.1.3
6.1.5	Software validation process schedule	Y	N	See 6.1.3
6.2	Requirements applicable to all software engineering processes	-		
6.2.1	Documentation of processes	-		
6.2.1.1		Y	N	See 5.2.1.1.
6.2.1.2		Y	N	See 5.2.1.1.
6.2.1.3		Y	N	See 5.2.1.1.

Clause	Description	D	Tailoring	Notes
6.2.1.4		Y	N	See 5.2.1.1.
6.2.1.5		Y	N	See 6.1.3
6.2.1.6		Y	Y	
6.2.1.7		Y	Y	
6.2.1.8		Y	N	See 6.1.3
6.2.1.9		N	N	
6.2.2	Software dependability and safety	-		
6.2.2.1		Y	N	Does not apply. The FAQAS framework does not handle critical software components.
6.2.2.2		N	N	
6.2.2.3		N	N	
6.2.2.4		N	N	
6.2.2.5		N	N	
6.2.2.6		N	N	
6.2.2.7		N	N	
6.2.2.8		Y	N	Does not apply, the FAQAS toolset does not consider hardware software interaction analysis
6.2.2.9		Y	N	See 6.2.2.8.
6.2.2.10		Y	N	See 6.2.2.1
6.2.3	Handling of critical software	-		
6.2.3.2		N	N	
6.2.3.3		N	N	
6.2.3.4		N	N	
6.2.3.5		N	N	
6.2.3.6		N	N	
6.2.3.7		N	N	
6.2.3.8		N	N	
6.2.4	Software configuration management	-		
6.2.4.1		Y	N	Does not apply for the type of product being developed.
6.2.4.2		Y	N	See 6.2.4.1
6.2.4.3		Y	Y	
6.2.4.4		Y	Y	
6.2.4.5		Y	N	The project does not include traditional code generation tools.

Clause	Description	D	Tailoring	Notes
6.2.4.6		Y	N	Changes to the agreed objectives of the FAQAS framework will be discussed during the agreed progress meetings as per Section 4 of SoW.
6.2.4.7		Y	N	See 5.2.3.
6.2.4.8		Y	Y	
6.2.4.9		Y	Y	
6.2.4.10		Y	Y	
6.2.4.11		Y	Y	
6.2.5	Process metrics	-		
6.2.5.1		Y	N	Given that (1) the FAQAS framework is not in-flight software and (2) the development team is limited in number, we aim to reduce the effort dedicated to reporting about the development process.
6.2.5.2		Y	N	See 6.2.5.1.
6.2.5.3		Y	N	See 6.2.5.1.
6.2.5.4		Limited to number of problems detected during validation	N	See 6.2.5.1.
6.2.5.5		Y	N	See 6.2.5.1.
6.2.6	Verification	-		
6.2.6.1		Y	Y	
6.2.6.2		Y	N	Does not apply because it matches the activities run to provide deliverables D4 and D5.
6.2.6.3		Y	N	See 6.2.6.2.
6.2.6.4		Y	N	See 6.2.6.2.
6.2.6.5		N	N	
6.2.6.6		N	N	
6.2.6.7		Y	N	See 6.2.6.2.

Clause	Description	D	Tailoring	Notes
6.2.6.8		Y	N	The review of documents is part of the milestone review process for the FAQAS activity.
6.2.6.9		Y	N	See 6.2.6.8
6.2.6.10		Y	N	See 6.2.6.8
6.2.6.11		Y	N	See 6.2.6.8
6.2.6.12		Y	Y	
6.2.6.13		N	N	
6.2.7	Reuse of existing software	-		
6.2.7.1		Y	Y	Our documentation will concern only the code developed by us not the code of third-party tools.
6.2.7.2		Y	Y	See 6.2.7.1.
6.2.7.3		Y	Y	See 6.2.7.1.
6.2.7.4		Bullets 3, 4, 5 and 7 not applicable. Bullet 2 limited to architectural design	Y	See 6.2.7.1.
6.2.7.5		Y	Y	See 6.2.7.1.
6.2.7.6		Y	Y	See 6.2.7.1.
6.2.7.7		Limited to the extent to ensure maintainability of the software	Y	Only the operational requirements for the development environment will be discussed.
6.2.7.8		Limited to the extent to ensure maintainability of the software	Y	See 6.2.7.7.
6.2.7.9		Y	N	See 6.2.7.1.
6.2.7.10		Y	N	See 6.2.7.1.
6.2.7.11		Y	N	See 6.2.7.1.
6.2.8	Automatic code generation	-		
6.2.8.1		Y	N	The project does not include traditional automatic code generation tools.
6.2.8.2		Y	N	See 6.2.8.1.
6.2.8.3		Y	N	See 6.2.8.1.
6.2.8.4		Y	N	See 6.2.8.1.
6.2.8.5		Y	N	See 6.2.8.1.

Clause	Description	D	Tailoring	Notes
6.2.8.6		Y	N	See 6.2.8.1.
6.2.8.7		Y	N	See 6.2.8.1.
6.3	Requirements applicable to individual software engineering processes or activities	-		
6.3.1	Software related system requirements process	-		
6.3.1.1		Y	Y	
6.3.1.2		Y	N	Does not apply for the type of product being developed.
6.3.1.3		Y	N	Does not apply, safety and dependability requirements are not foreseen for the FAQAS framework.
6.3.2	Software requirements analysis	-		
6.3.2.1		Y	N	Does not apply for the type of product being developed.
6.3.2.2		Y	N	See 6.3.1.2.
6.3.2.3		Y	N	See 6.3.1.3.
6.3.2.4		Y	Y	Only the operational requirements for the development environment will be discussed.
6.3.2.5		Y	N	The process will follow the milestones indicated in proposal document.
6.3.3	Software architectural design and design of software items	-		
6.3.3.1		Documentation control only	N	Does not apply for the type of product being developed.
6.3.3.2		Only recommended	N	
6.3.3.3		N	N	
6.3.3.4		Only if design standards are applied (6.3.2.2)	N	
6.3.3.5		N	N	
6.3.3.6		N	N	
6.3.3.7		Y	Y	
6.3.4	Coding	-		
6.3.4.1		Y	Y	

Clause	Description	D	Tailoring	Notes
6.3.4.2		Y	Y	
6.3.4.3		N	N	
6.3.4.4		N	N	
6.3.4.5		Y	Y	
6.3.4.6		Y	N	Given that (1) the FAQAS framework is not in-flight software and (2) the development team is limited in number, we aim to reduce the effort dedicated to reporting about the development process.
6.3.4.7		Y	N	See 6.3.4.6
6.3.4.8		The code shall be put under configuration control at the beginning of validation testing	N	6.3.3.1
6.3.5	Testing and validation	-		
6.3.5.1		No formal unit testing and integration activity required	Y	Please note that unit testing will concern only the code developed by us on top of existing tools. The code belonging to existing tools will not follow a unit testing procedure but will be validated at system level where the case study systems of the project play the role of acceptance criteria.
6.3.5.2		No formal unit testing and integration activity required	Y	See 6.3.5.1.
6.3.5.3		Test procedures and data verified by sample	Y	
6.3.5.4		Applicable to validation and acceptance tests only	Y	

Clause	Description	D	Tailoring	Notes
6.3.5.5		Y	Y	
6.3.5.6		Y	Y	
6.3.5.7		Y	Y	
6.3.5.8		Y	Y	
6.3.5.9		N	N	
6.3.5.10		N	N	
6.3.5.11		Y	Y	
6.3.5.12		Y	Y	
6.3.5.13		Y	Y	
6.3.5.14		Applicable to validation and acceptance tests only	N	The review of documents is part of the milestone review process for the FAQAS activity.
6.3.5.15		Y	Y	
6.3.5.16		Y	Y	
6.3.5.17		Y	N	Changes in the hardware platform are not foreseen.
6.3.5.18		Y	Y	
6.3.5.19		N	N	
6.3.5.20		Y	N	Does not apply, the FAQAS toolset is not a flight software
6.3.5.21		Y	Y	
6.3.5.22		Y	N	See 6.3.4.6
6.3.5.23		Y	N	See 6.3.4.6
6.3.5.24		Y	Y	
6.3.5.25		Y	N	Does not apply, test constraints concerning physical, performance, functional, controllability and observability limitations are not foreseen.
6.3.5.26		Y	Y	
6.3.5.27		Y	N	For its nature, the FAQAS framework will not require specific testing activities in the operational environment.
6.3.5.28		N	N	

Clause	Description	D	Tailoring	Notes
6.3.5.29		Y	N	See 6.3.4.6
6.3.5.30		N	N	
6.3.5.31		N	N	
6.3.5.32		Y	N	The software validation plan will be specified in deliverable D4 following requirement R4-1.
6.3.6	Software delivery and acceptance	-		
6.3.6.1		Y	Y	
6.3.6.2		Y	Y	
6.3.6.3		Y	N	Does not apply because acceptance testing will concern the execution of the FAQAS framework against the case study systems.
6.3.6.4		Y	N	See 6.3.6.3.
6.3.6.5		Y	Y	
6.3.6.6		Y	N	Does not apply because of the type of product being developed.
6.3.6.7		Y	N	Assistance will be provided through GITLAB issue tracker.
6.3.6.8		Y	N	See 6.3.6.7.
6.3.6.9		Y	N	See 6.3.6.7.
6.3.7	Operations	-		
6.3.7.1		Y	N	Does not apply, the toolset is not mission software.
6.3.7.2		Bullet on safety features not applicable	N	Does not apply because this item matches the review activities focussing on project deliverables D4 and D5.
6.3.7.3		Y	N	See 6.3.7.2.
6.3.8	Maintenance	-		
6.3.8.1		Y	Y	
6.3.8.2		Y	Y	
6.3.8.3		Y	Y	

Clause	Description	D	Tailoring	Notes
6.3.8.4		Y	Y	
6.3.8.5		Y	N	See 6.3.6.7.
6.3.8.6		Y	N	See 6.3.6.7.
6.3.8.7		Statistical data not collected	N	See 6.3.6.7.
7	Software product quality assurance	-		
7.1	Product quality objectives and metrication	-		
7.1.1	Deriving of requirements	Y	Y	
7.1.2	Quantitative definition of quality requirements	Y		
7.1.3	Assurance activities for product quality requirements	Y	Y	
7.1.4	Product metrics	Bullet 4.(a) not applicable	N	Given that the development team is limited in number, we aim to reduce the effort dedicated to reporting about the development process.
7.1.5	Basic metrics	Design-relevant and fault density/failure intensity metrics not required	N	See 7.1.4.
7.1.6	Reporting of metrics	Y	N	See 7.1.4.
7.1.7	Numerical accuracy	Y	N	See 7.1.4.
7.1.8	Analysis of software maturity	N	N	
7.2	Product quality requirements	-		
7.2.1	Requirements baseline and technical specification	-		
7.2.1.1		Y	Y	
7.2.1.2		Y	Y	
7.2.1.3		Y	Y	We will provide a traceability table concerning only the requirements tested in the unit test cases.
7.2.2	Design and related documentation	-		
7.2.2.1		Y	Y	
7.2.2.2		Y	N	Only the operational requirements for the development environment will be discussed.

Clause	Description	D	Tailoring	Notes
7.2.2.3		Y	N	Does not apply, since the FAQAS toolset is not a critical software.
7.2.3	Test and validation documentation	-		
7.2.3.1		Y	Y	Please note that unit testing will concern only the code developed by us on top of existing tools. The code belonging to existing tools will not follow a unit testing procedure but will be validated at system level where the case study systems of the project play the role of acceptance criteria.
7.2.3.2		Y	Y	See 7.2.3.2.
7.2.3.3		Y	Y	See 7.2.3.2.
7.2.3.4		Y	Y	See 7.2.3.2.
7.2.3.5		Y	N	Hardware configurations are not foreseen.
7.2.3.6		Y	Y	See 7.2.3.2.
7.3	Software intended for reuse	-		
7.3.1	Customer requirements	Y	Y	
7.3.2	Separate documentation	Y	N	Our documentation will concern only the code developed by us not the code of third-party tools.
7.3.3	Self-contained information	Y	N	See 7.3.2.
7.3.4	Requirements for intended reuse	Y	Y	
7.3.5	Configuration management for intended reuse	Y	N	Does not apply for the type of product being developed.

Clause	Description	D	Tailoring	Notes
7.3.6	Testing on different platforms	Y	N	The FAQAS framework is a desktop tool that is not expected to be used on different operating systems that the ones indicated in the requirements. For its nature, newer versions of the operating system should not lead to any problem in the FAQAS framework.
7.3.7	Certificate of conformance	Y	N	See 7.3.6.
7.4	Standard hardware for operational system	-		
7.4.1	Hardware procurement	Y	N	Hardware procurement is not foreseen.
7.4.2	Service procurement	Y	N	Service procurement is not foreseen.
7.4.3	Constraints	Y	N	See 7.4.1 & 7.4.2.
7.4.4	Selection	Y	N	Specifications for ground computer equipment are not foreseen.
7.4.5	Maintenance	Y	N	The FAQAS toolset does not have hardware constraints.
7.5	Firmware	-		
7.5.1	Device programming	Y	N	The FAQAS toolset does not foresees device programming.
7.5.2	Marking	Y	N	See 7.5.1.
7.5.3	Calibration	Y	N	See 7.5.1.