

Quality Assurance Plan for the SCADA System of the Cherenkov Telescope Array

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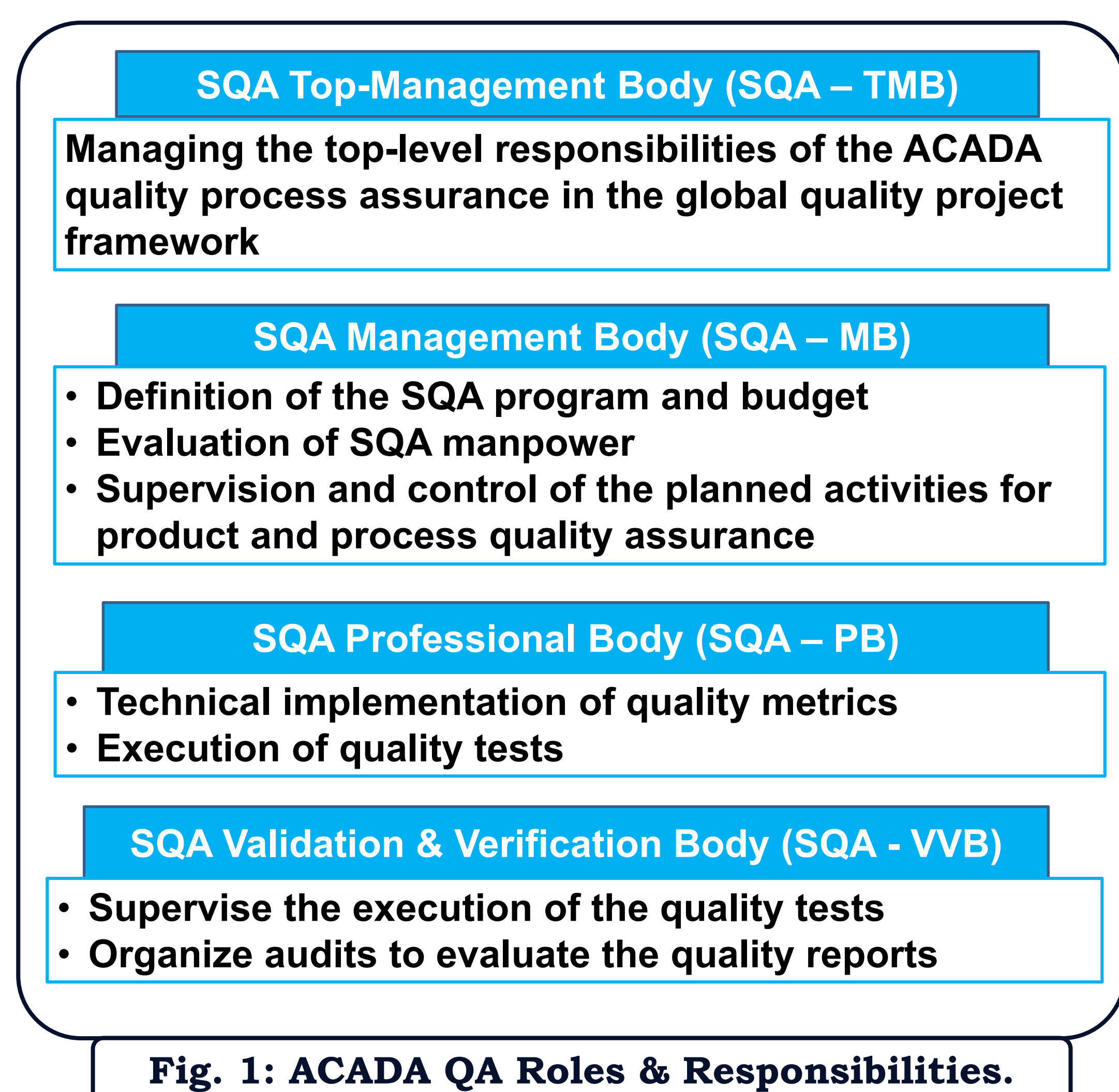
³See www.cta-observatory.org

ABSTRACT

The CTA Observatory will comprise more than 100 telescopes and calibration devices that need to be centrally managed and synchronized by a complex SCADA system, named Array Control and Data Acquisition (ACADA). The quality level of ACADA system is crucial for maximizing the efficiency of the CTA operations. The Quality Assurance (QA) strategy adopted by the ACADA team must guarantee for each phase of the project the required level of quality in the design, implementation, testing, integration, configuration, usage and maintenance of the ACADA product.

QA MANAGEMENT ORGANIZATION

The roles and responsibilities of the personnel assigned to the ACADA [1] Quality Assurance process are individuated based on the ACADA Management Plan and ACADA Software Development Life Cycle (SDLC) [2].



PRODUCT ASSURANCE

The adopted Product Quality and Quality in Use models for ACADA follow the quality standard [3]:

- The Product Quality Model focuses on the quality of the work package by measuring the quantities related to the internal and external metrics.
- The Quality in Use metrics measure the intrinsic properties of the system, including software, hardware, communication and users. The Product assurance activity is coherently applied at each stage of the SDLC.

PROCESS ASSURANCE

The process assessment actions defined for the realization of ACADA are:

- Supervision of the SQA activities
- Supervision of periodic reports to assess the achievement of quality objectives
- Review of progress of the SQA activity
- Final approval of the quality of software products

The tasks are conducted based on the ACADA development activity schedule.

ACKNOWLEDGEMENTS

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www.cta-observatory.org/consortium_acknowledgments

QUALITY ASSURANCE LIFE CYCLE

ACADA Quality Life Cycle (SQLC): Define Product and Process QA tasks to be performed coherently with the ACADA SDLC.

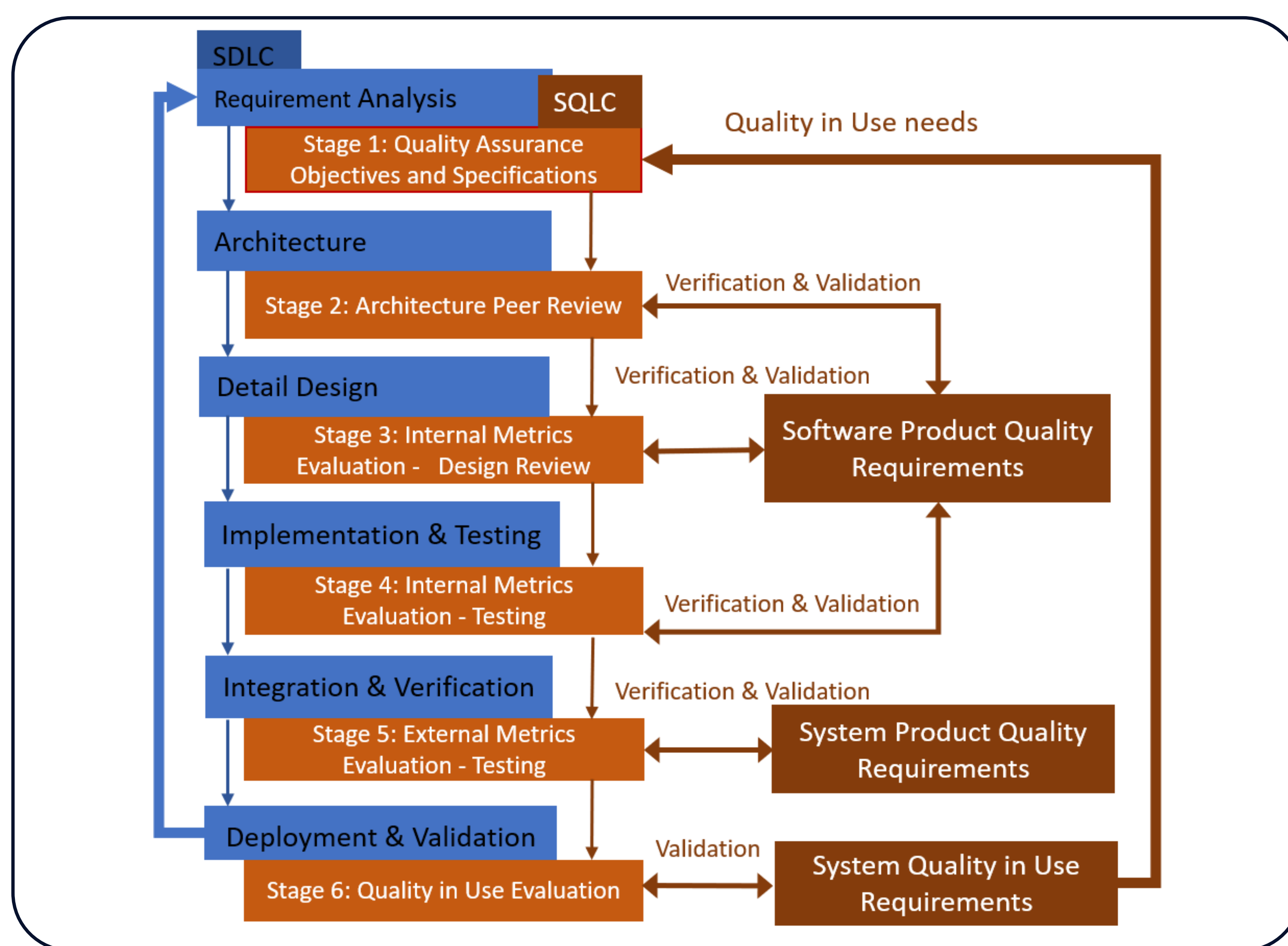


Fig. 2: Software Quality Life Cycle (blue boxes) and Software Development Life Cycle (orange boxes)

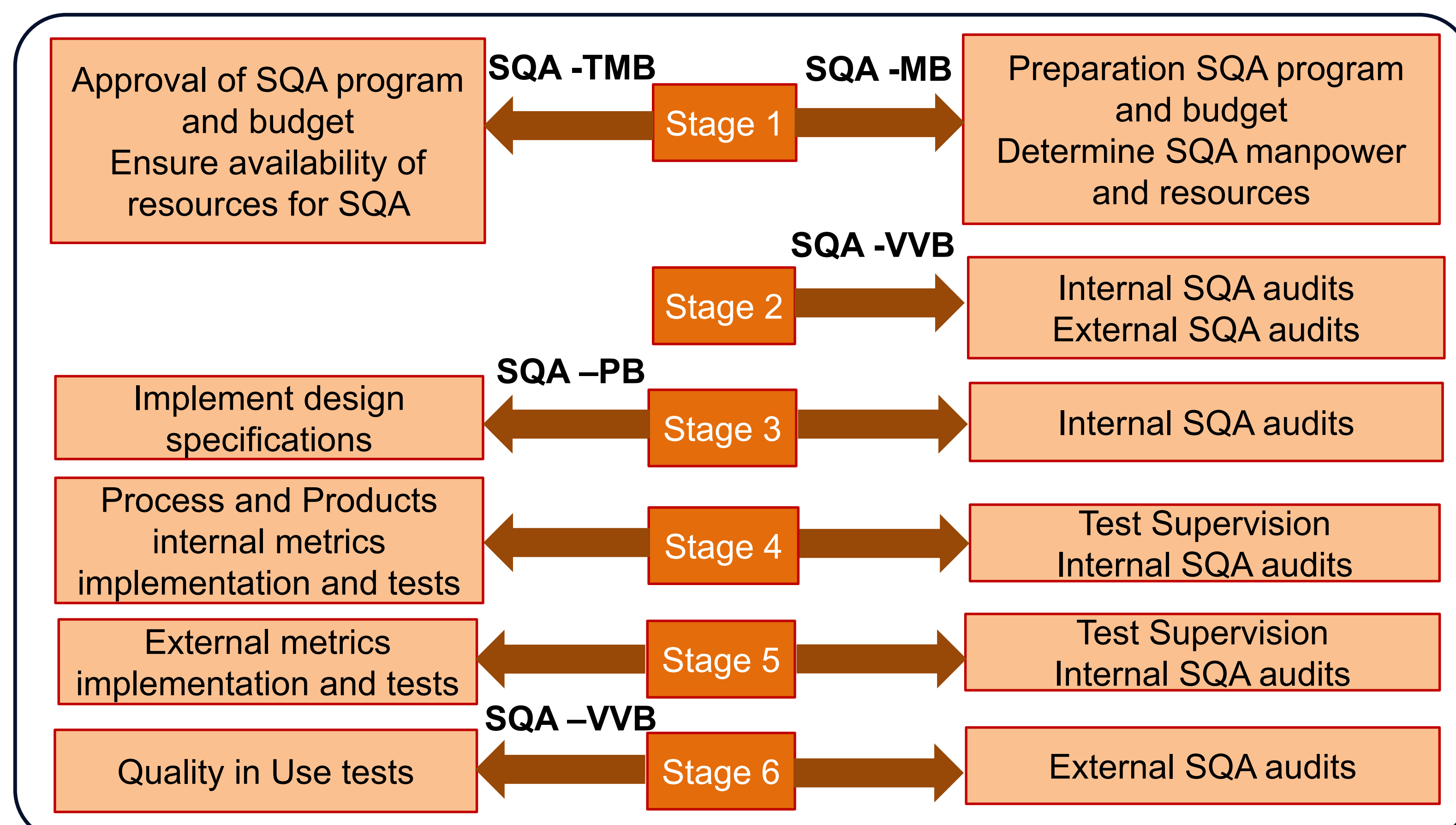


Fig. 3: ACADA Software Quality Life Cycle

References

- [1] See poster WEPHA117
- [2] ISO/IEC 12207:2017, "Systems and Software engineering – Software life cycle processes".
- [3] ISO/IEC 25010:2011, "Systems and Software engineering -Systems and Software Quality Requirements and Evaluation-System and Software quality models".