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SKA control system in 2025

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It is 2025 and the SKA Telescope Control System has come a long way since the start of construction. The outline of the software architecture and some key technology decisions (including the choice of Tango) were made early. To keep the geographically distributed teams engaged, and avoid creating silos and fragmentation, development of virtually all the software components started in parallel; often while the detailed designs for the custom hardware was still evolving and before the COTS equipment was selected. The deployment strategy was adjusted to align with the industry trends. From designing a software system for hardware that does not exist we arrived at the point where we can prove that the software can actually work with the hardware. However, the software design and implementation meeting reality uncovered some issues, forcing us to make changes (ska-tango-base) and learn hard lessons (naive implementation of event callbacks). Are we ready to deliver a large distributed control system? We realize that scalability will be a challenge. This paper provides an honest overview of what works and what did not work so well, and how we address issues.

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Footnotes

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