

Technological options for the Southern Wide-field Gamma-ray Observatory (SWGGO) and current design status

Felix Werner and Lukas Nellen on behalf of the SWGGO Collaboration

The SWGGO Collaboration is in the process of designing and prototyping a wide field of view, high duty cycle complement to CTA and the existing ground-based particle detectors of the Northern Hemisphere (HAWC and LHAASO). One of the goals is to build a *cost-effective, low-maintenance detector*. We compare various technological options for the design and show a conservative *reference configuration* (for first large-scale simulations and cost comparisons) composed of WCD tanks, large-area PMTs, and waveform-sampling ADCs. We choose a *modular design for the DAQ*, based on commodity network components and focused on moving signal and trigger processing into *software for flexibility*. A *prototype DAQ chain* exists and may be tested in a small tank-based setup in Peru in the next austral summer.

Material

- Proceedings: <https://pos.sissa.it/395/714>
- Media: <https://icrc2021-venue.desy.de/video/Technological-options-for-the-Southern-Wide-field-Gamma-ray-Observatory-SWGGO-and-current-design-status/db9110509a063575bf27ed09ee03a38d>

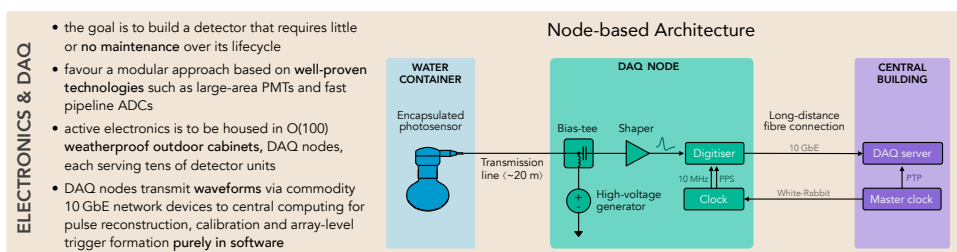
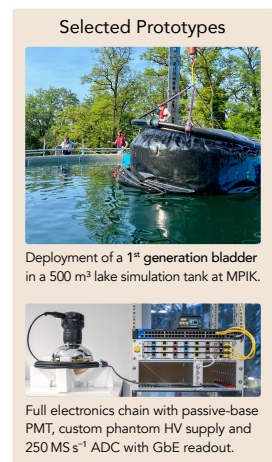
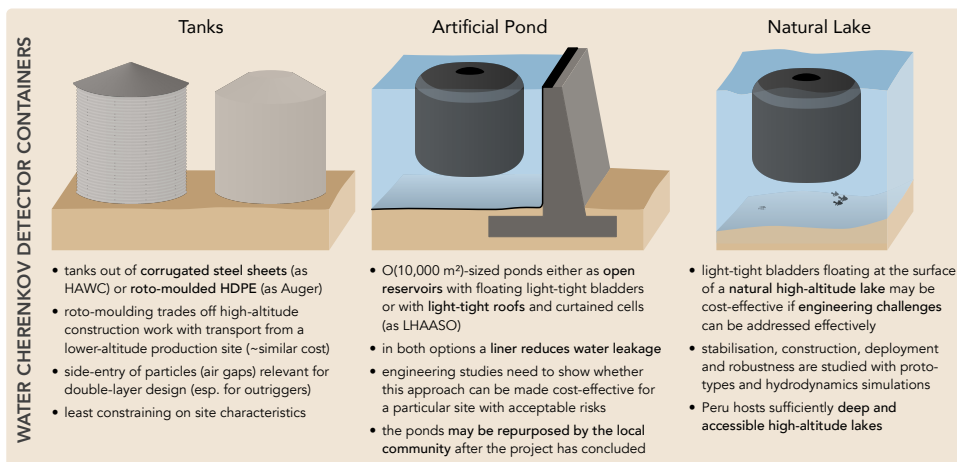


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Linked ICRC2021 Proceedings

This contribution

- <https://pos.sissa.it/395/714/>

SWGGO status and prospects

- <https://pos.sissa.it/395/023/>

Lake-based detector studies

- <https://pos.sissa.it/395/708/>

Double-layered WCD design

- <https://pos.sissa.it/395/902/>

Shallow WCD design with 4 PMTs

- <https://pos.sissa.it/395/707/>