Cosylab Switzerland and SKA

Ivana Novak
Project Manager and Control Systems Engineer

Evangelos Makris
Senior Project Manager

Date 08/09/2023
About Cosylab
Cosylab at a glance

- World’s leading provider of software solutions for the planet’s most complex, precise, and advanced systems for 20+ years
- Cross-functional team of 300+ highly skilled engineers, physicists, and domain experts
- Established processes, ISO and IEC
- Highest credit rating SB1 (AA by S&P)
- HQ in Slovenia; subsidiaries worldwide (Switzerland, Sweden, USA, China, Japan)
Cosylab SW is powering big physics infrastructure
What we do in Cosylab Switzerland?

**Scientific**
- Fusion
- Research Facilities
- Space & Astronomy

**Industrial**
- SCADA Systems
- Enterprises
- Quantum Technology
- Complex Machines

**Medical**
- Start ups
- Medical Services
- Radiation therapy
- Medical Products
- Device Manufacturers

**Medical Devices Enterprises**
- QualySense
- qnami
- EBAMed
- Positrigo

www.cosylab.com
Cosylab at SKA
Observation Management and Control
Cosylab at SKA

Past and Current state

• Contribution through EPFL/SERI - Bridging phase (June 2021 – May 2022)
  • 2 FTEs funded by EPFL/SERI

• Contribution as an independent Software Supplier of SKAO - Framework agreement
  • 2 FTEs directly funded by SKAO from May 2022 – present
  • Switzerland joining as a full time member Jan 2022
  • Planned budget for Cosylab to be consumed until March 2024
SKA Software

Courtesy of Marco Bartolini (SKA Onboarding materials)
Teams working on SKA Software
Teams working on SKA Software
Cream Team

• Lead by INAF in Italy (Florence Arcetri Observatory)

• Team Members
  • Italy: 5
  • Switzerland: 2
  • Portugal: 1
  • India: 1
  • UK: 1

• Cosylab Team
  • Ivana Novak
    • M.Sc Physics, Astronomy
    • 7 years of experience in control systems
  • Martino Colciago
    • M.Sc Automation Engineering
    • 13 years of experience in control systems
  • Alexander Söderqvist (former member)
    • M.Sc Electrical Engineering
    • 11 years of experience in control systems

• Focus on:
  • Central Signal Processor Local Monitoring and Control (**CSP.LMC**)
  • **Taranta**: tool for creating web-based engineering UIs
  • Part of Observation Management and Control (OMC)
  • Scaled Agile Framework (SAFe) practices
SKA Software

Central Signal Processor Local Monitoring and Control (CSP.LMC) are the responsibility of the Cream Team

Courtesy of Marco Bartolini
Central Signal Processor
Collaboration with other teams
Colaboration with other teams

CIPA Team = responsible for Mid.CBF
Collaboration with other teams

Perentie Team = responsible for Low.CBF
Collaboration with other teams

PSS Team = responsible for PSS component
Collaboration with other teams

PST Team = responsible for PST component
Collaboration with other teams

Himalaya, Sahyadri and Naksharta teams = responsible for OSO and TMC components
Collaboration with other teams

System Team = responsible for CI/CD and testing infrastructure
Bang! Team = responsible for platforms and services
Collaboration with other teams

TOPIC Team = responsible for integration of CSP LOW components at PSI facility
Viola Team = leading work on AIV LOW
Atlas Team = leading work on AIV MID
Array Assembly 0.5

• 4 dishes/6 stations deployment on site
• Goal: end-to-end test of interferometry
• Most of the subsystems deployed
  • Verification of system performance
  • Test of interfaces
CSP.LMC Work

- Focus on integration with other components in preparation for AA0.5
  - Mid.CBF
  - Low.CBF
  - PST
  - TMC

- Testing
  - At integration facilities
  - SKAMPI (integration environment)
Onsite visit

- Visit at CSIRO, Marsfield Site in Sydney, Australia
- Collaboration with teams working on Low.CBF and PST components
  - Architectural workshop and interface alignment
  - Integration testing at LOW PSI
OMC & Services PI Planning at SKAO HQ
Future?
Thank you.

Ivana Novak
Project Manager and Control Systems Engineer

Email: ivana.novak@cosylab.com