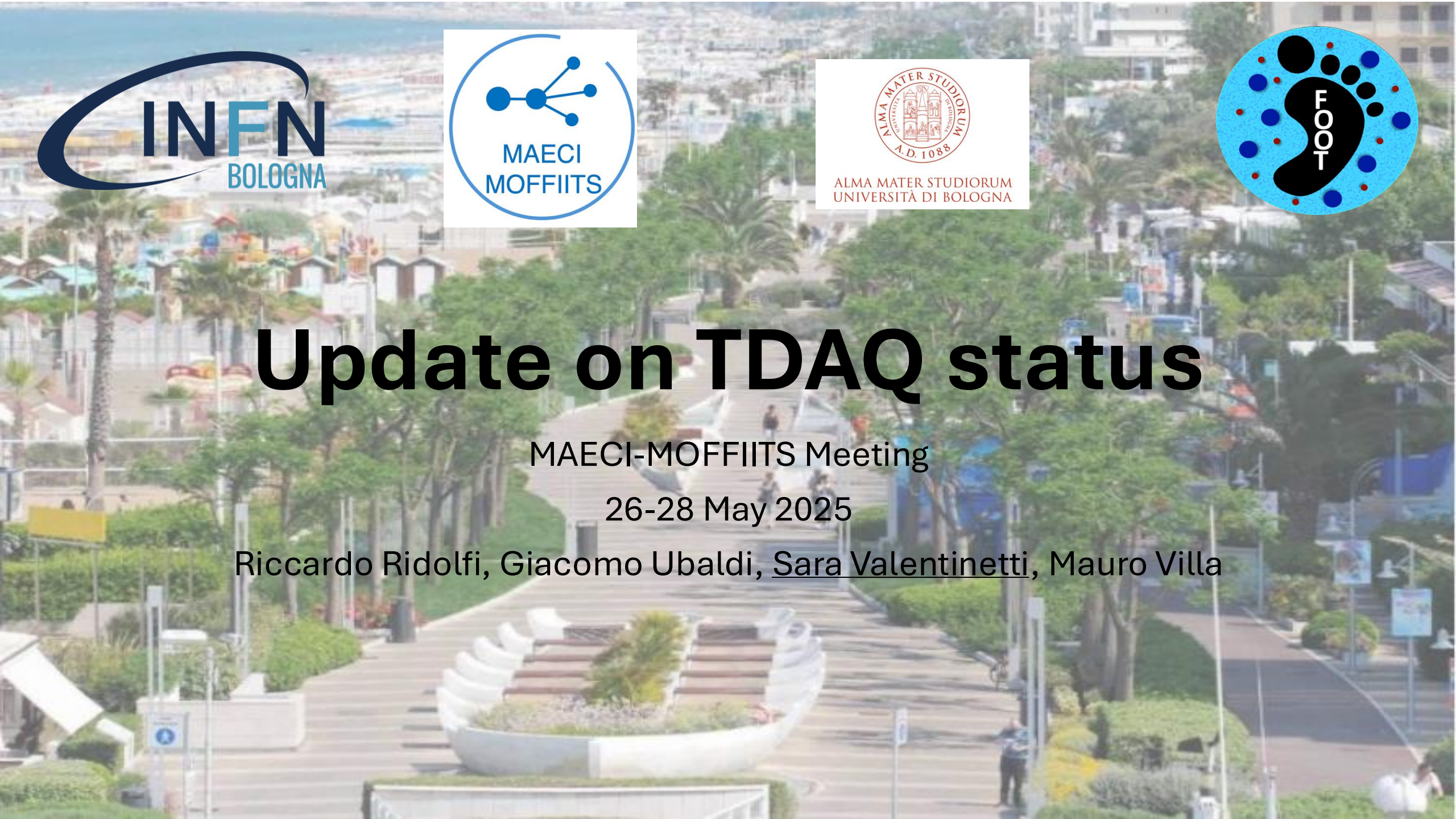


Update on TDAQ status

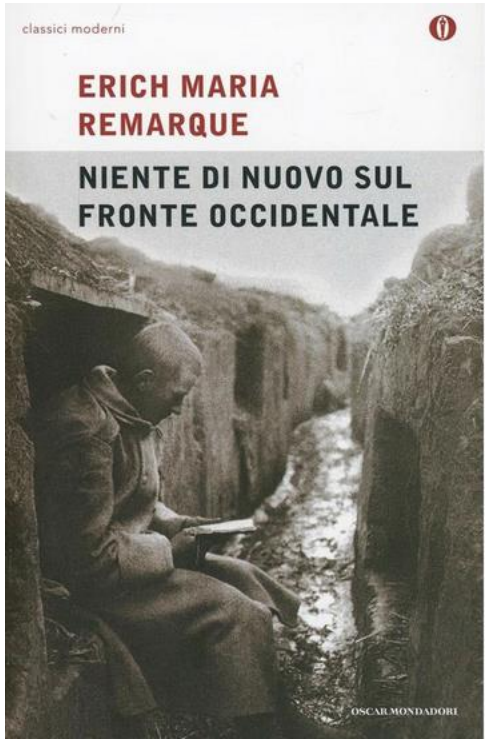
MAECI-MOFFIITS Meeting

26-28 May 2025

Riccardo Ridolfi, Giacomo Ubaldi, Sara Valentinetti, Mauro Villa

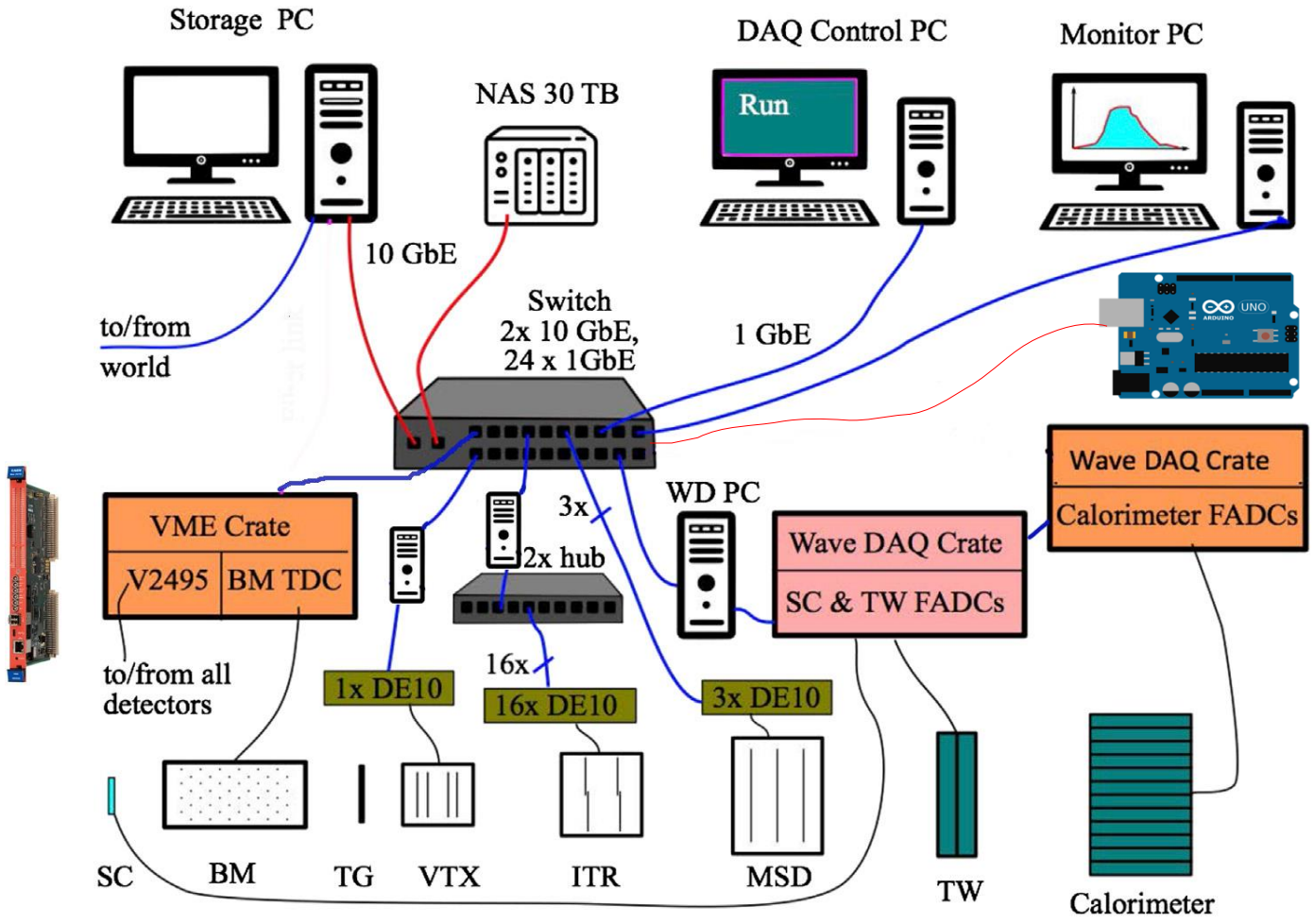
Summary

- TDAQ overview;
- TDAQ summary of CNAO2024 data taking;
- Future plans and ideas;
- Conclusions.



All quiet on the western front

TDAQ Infrastructure



TDAQ for CNAO 2024

- **update of the whole infrastructure;**
- a lot of work on the **vertex detector** (thanks to Giacomo U.);
- deployment of **parallel TDAQ** to speed up the process;
- **correct handling of starting procedure and busy** settings to avoid race conditions;
- automatic backup of vertex and inner tracker configuration files.

TDAQ during CNAO 2024

- **longer warm up** than expected (first time with new TDAQ and with all detectors);

- **parallel TDAQ worked** however data acquisition **slower** than before;

- **inefficient CPU workload** by Linux kernel, excessive centralization in the infrastructure among possible reasons which will be investigated;
- **come back to serial TDAQ** without problems (but slower start-stop: ~2min):

Future Plans and Ideas

- Add an automatic information on **detectors available** in the run;
- Solve the problem of **parallel acquisition**;
- Add the **automatic elog** in the dat pannel in order to avoid error in cataloguing runs;
- Add the **new vertex** developed within the PRIN 2022 won by Eleuterio and me (see S. Rabaglia, A. Besson&G. Bertolone presentations);
- How do we make sure that **synced files** don't lose information from unsynced ones?

Future Plans and Ideas

- Add an automatic information on **detecto**
- Solve the problem of
- Ad
- RIN 2022 won by Eleuterio guste Besson presentations);
- H ke sure that **synced files** don't lose information from un ed ones?

We need to work without the pressure of a data taking, testing the whole system in our lab with the largest number of available detectors!

Conclusions

- **TDAQ@CNAO2024 worked well but still too slow** start-stop procedure (almost two minutes) in both configurations (parallel and serial);
- it is crucial to take time **to test improvements in the lab** without “beam pressure” well before the beam test and with the largest number of available detectors
- in next moths we will be able to have a **data taking-like setup** in the lab (VT, WaveDAQ, MSD board proxies?);
- we will add the the TDAQ stream the **new vertex** (maybe for next beam test?).


Thank you for the attention!!