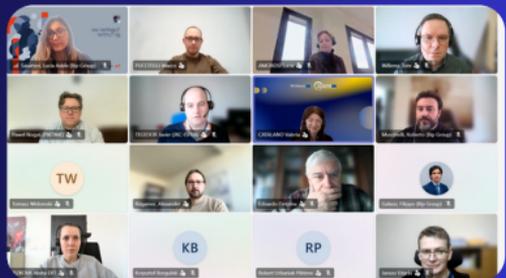




NEWSLETTER

February was a key month for the CLEPSYDRA project, with the consortium focusing on the final preparations ahead of the upcoming Preliminary Design Review (PDR) Milestone with EUSPA.

Partners worked closely to consolidate technical progress and align the key elements to be presented during the review. This phase included the validation of project documentation, the consolidation of work packages' contributions, and internal coordination to ensure consistency across the overall system approach.





With
Tomasz Widomski



QeA

Why is time synchronization so important for companies and critical infrastructures today?

Synchronization enables the power of UTC time domain operation of any distributed architecture of IT/OT of critical infrastructure. As a consequence, synchronization enables Time Coordinated Computing (TCC). The TCC creates data fusion functionality, a new, valuable information that is not available from classic stand-alone computers (IT) and measurements sensors (OT). Looking from the data-processing point it also enables parallelism of computation, the concurrency in the distributed architecture.

On a macro scale, we note it by getting more visible complexity of IT/OT and a new class of solutions, so-called "systems of the systems". Altogether, time creates an invisible link between all players of a distributed IT/OT architecture. Synchronization ensures the order of data processing and the chronology of events. Summarizing, the synchronization is a symphony with many players, and TIME is the conductor of the orchestra. Therefore, desynchronizing critical systems is probably one of the most powerful cyber weapons already today. Instead of hacking login cryptography, it is easier to manipulate clocks within the critical infrastructure, leading to a blackout.



CLEPSYDRA

WHY IS TIME SYNCHRONIZATION ESSENTIAL FOR THE FINANCE SECTOR?

Time synchronization is essential in finance because the entire modern financial system relies on distributed digital transactions that must be recorded with absolute temporal accuracy.

In financial markets such as stock exchanges, trading platforms and clearing systems, thousands of operations take place within microseconds. Precise synchronization ensures that every transaction is accurately time-stamped and that the exact sequence of events can be clearly established. This is crucial to avoid disputes over execution order and to guarantee market transparency.

Time accuracy is also a key regulatory requirement. Many financial regulations require extremely precise timestamps. In Europe, for example, MiFID II requires trading systems to be synchronized to UTC with very high levels of precision. Without reliable time synchronization, financial institutions may face compliance issues, regulatory penalties and difficulties in proving the correct sequence of transactions.



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