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Status of the ITER data handling ecosystem

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Data is one of the key deliverables of the ITER machine.Since 2019, the ITER data handling system has gradually been extended to cope with the commissioning of new plant systems and new needs.This contribution gives an overview of the different sub-systems which compose the data handling ecosystem from data archivers to visualization tools.We will summarize the short- and long-term storage for data archiving and its challenges. Different data archivers based on HDF5 have been developed to collect the data coming from the fast and slow systems.Techniques to speed-up data retrieval has been implemented via data processors.We have extended the UDA library [Unified Data Access], developed by UKAEA for MAST, to support our data models by adding a new plugin which uses the client-server model that UDA is based on.The same server with a different plugin is also used offline to retrieve data for processing, which is based on the IMAS [Integrated Modelling & Analysis Suite] framework.Our ecosystem includes a web application, which allows plotting both archived data and live data.For interoperability purposes with other systems, a plugin for Grafana has been developed to create dashboards which mix archived data and monitoring metrics.In collaboration with our Science and Diagnostic teams, we are developing visualization tools to allow plotting offline data and experimental data.Finally, we will conclude with key takeaways and an outlook on the impact of AI on the data handling system.

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Author: ABADIE, Lana (ITER)

Co-authors: Mr FERRO, Giuseppe (ITER); Mr CABANILLA, Jhon (Indra (Spain)); Mr HOLLOCOMBE, Jonathan (United Kingdom Atomic Energy Authority); Mr HOENEN, Olivier (ITER); Mr MARTIN VILLARES, Pablo (Indra (Spain)); Mr ABREU, Paulo (ITER); Mr SAWANTDESAI, Prasad (ITER); Mr CASTRO, Rodrigo (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas); Mr PINCHES, Simon (ITER); Mr SIMROCK, Stefan (ITER); Mr MAKUSHOK, Yury (Indra (Spain)); Mr DEQUIDT, davy (ITER)

Presenter: ABADIE, Lana (ITER)

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