

STREAMLINE Project

WP4 – Build capacity

Status update as of May 2022

- **Remote sample tracking has been extended to all beamlines and experiments**, which enabled samples to be sent and tracked for remote experiments during the COVID pandemic. The sample tracking has been used for sending over 5000 samples for 42 beamlines since the start of the EBS in 2020.
- **A high-throughput XRF spectroscopy system has been co-designed, installed, commissioned and deployed on BM23** in collaboration with the University of Montpellier. The system is already available for exploitation by both academics and industrial users. (See related [news item](#))
- A routine powder diffraction high throughput system (HTpXRD) is currently under development in collaboration with the company BASF. A first prototype system will be tested on ID31 in June. A service descriptor for commercial exploitation is also under preparation. (See related [news item](#))
- **EASI-STRESS**, a project fully dedicated to residual stress measurement has been financed by H2020. (see: [EASI-STRESS project website](#))
- A generic solution for workflows for automating data reduction has been developed and tested on MX beamlines. The workflows for the high throughput powder diffraction experiment have been developed and will be tested with the first experiments using the new HTpXRD sample environment on ID31. (See related [news item](#))
- **The new database backend of ISPyB in Python developed by EMBL-HH has been validated at the ESRF as part of STREAMLINE** and is being applied to the CryoEM as first test case. The next steps are to specify the needs for Serial Crystallography (SSX) with the scientists and then develop the backend and frontend / web interface.
- **An AI/ML algorithm has been developed** for computing XRF intensities for a subset of specific elements (e.g. Al_K) from an XRF spectrum. The first use case will be to calculate and display the elements distribution of XRF maps on ID21.