

## **Automating the generation of the bathymetric surface reference through expert rules and ETL: the Tethys project**

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Shom has a 300 years long history of bathymetric data collection and dissemination in nautical products and digital bathymetric models. While this large data holding might be seen as a treasure, it can also be seen as a burden in terms of management and selection of relevant information to be used in the dedicated products (cartographic products, bathymetric grid generation and defense related products). Since 2019, Shom's efforts have been brought together to fundamentally review all the processes at stake between our database and the final products, with the main aim of generating one reference surface, readily available for the subsequent generation of bathymetric products. These tasks were previously performed manually, with variations in practice and relatively poor capitalization.

These efforts have been put together as part of the Téthys project which is constituted of 5 main actions:

- Improving data extraction and data management at the level of our national bathymetric database
- Reinforcing the reliability of metadata and associated sources of information for each survey
- Automating relevant data selection and clipping through expert rules (known as deconfliction)
- Quality checking through consistency verification with existing nautical products
- Scaling up globally

All these actions are supported by a strong willingness to include as much automated processes as possible, (benefiting from an updated machine-readable attributes schema and associated filing effort), throughout the overall workflow using modern and dedicated off-the-shelf ETL software. Doing so, human interventions are of primary importance as they are now focused only on ambiguous issues and supported by dedicated expertise.

The presentation will discuss the main methodological steps and specific automating tools that were developed. It will also present how the scaling up to the full extent of Shom's existing data is being undertaken. Finally, concluding remarks will be provided concerning the generated benefits.