

Metadata Extraction Tool and Schema Mapper for Scanning Electron Microscopy (SEM) images

Metadata from SEM images mapped to a well-defined schema
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Introduction

The tool extracts metadata from TIFF images generated by Scanning Electron Microscopes (SEM) and maps the metadata to the published SEM schema for eventual use with Electronic Lab Notebooks (ELN) and repositories.

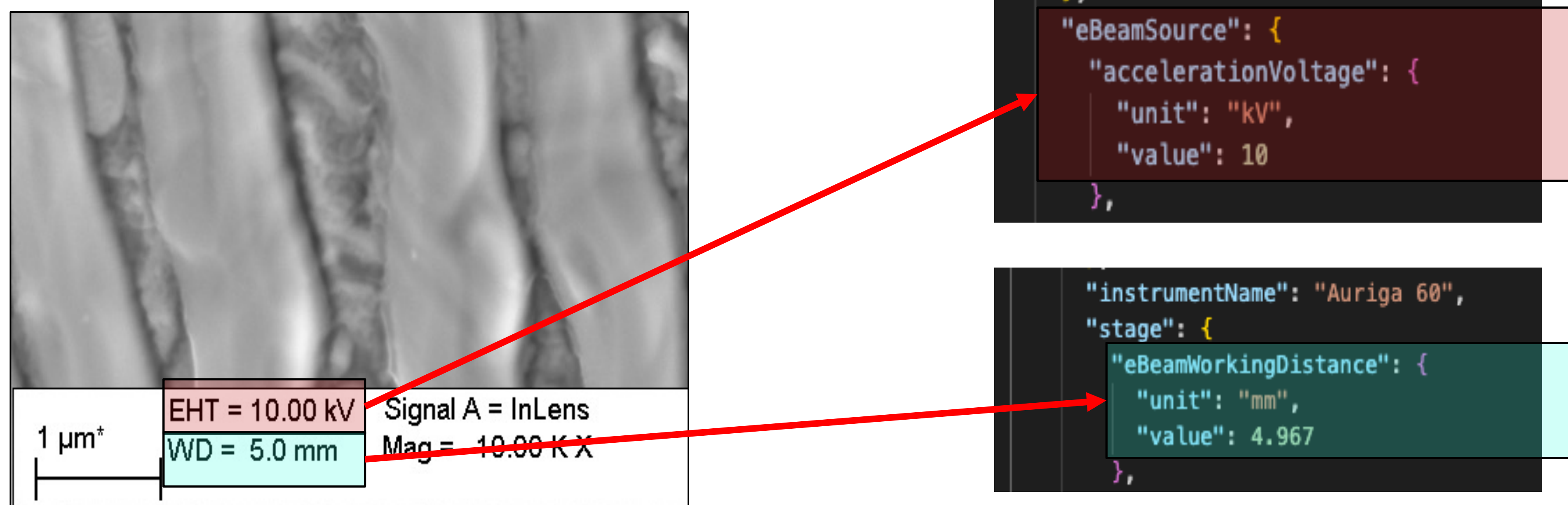


Fig. 1: Comparison between embedded SEM image metadata and the extracted, formatted JSON metadata document mapped to the defined schema.

Fig. 2: Example workflow for a data curator or research scientist utilizing and working with SEM images containing metadata.

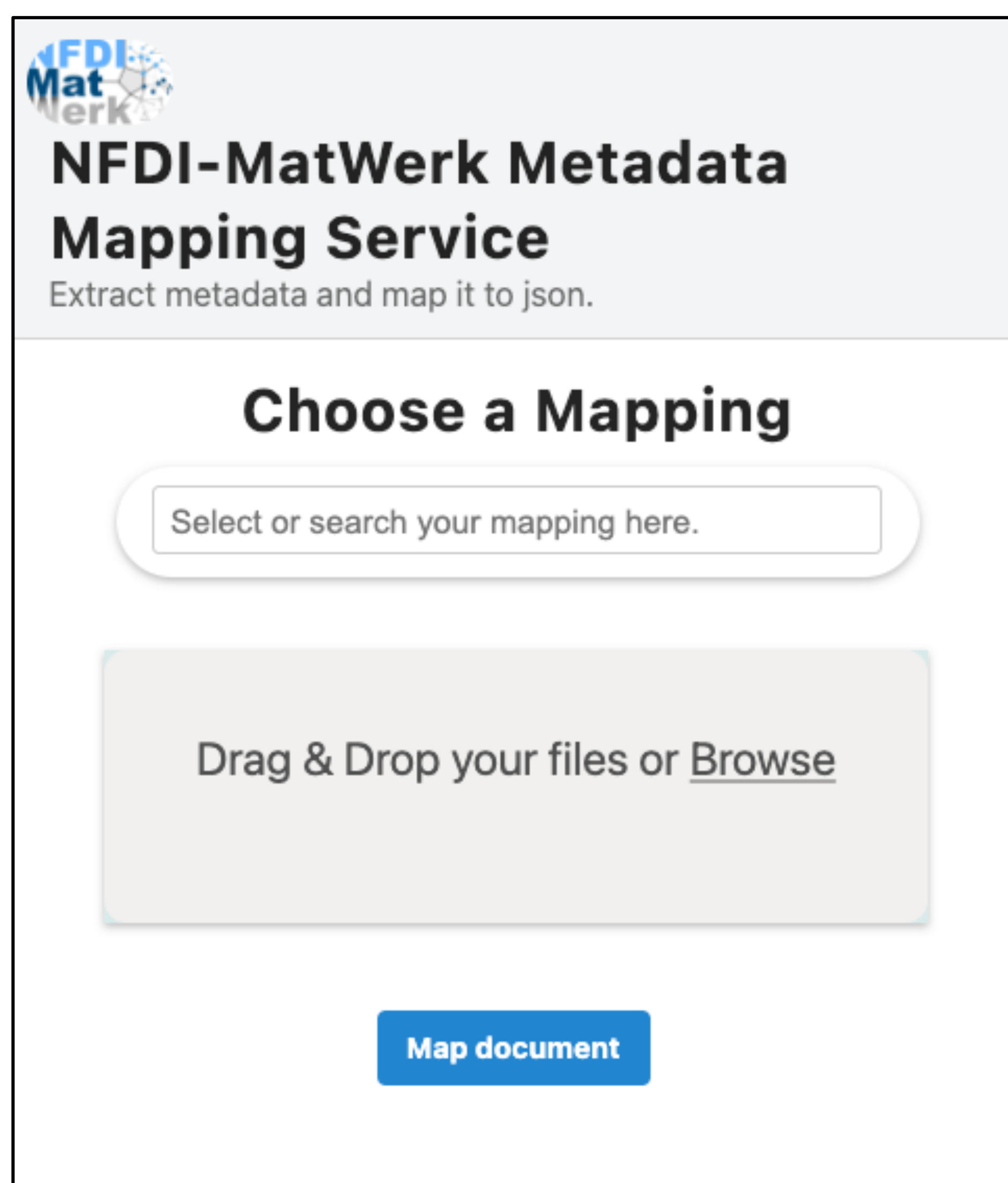
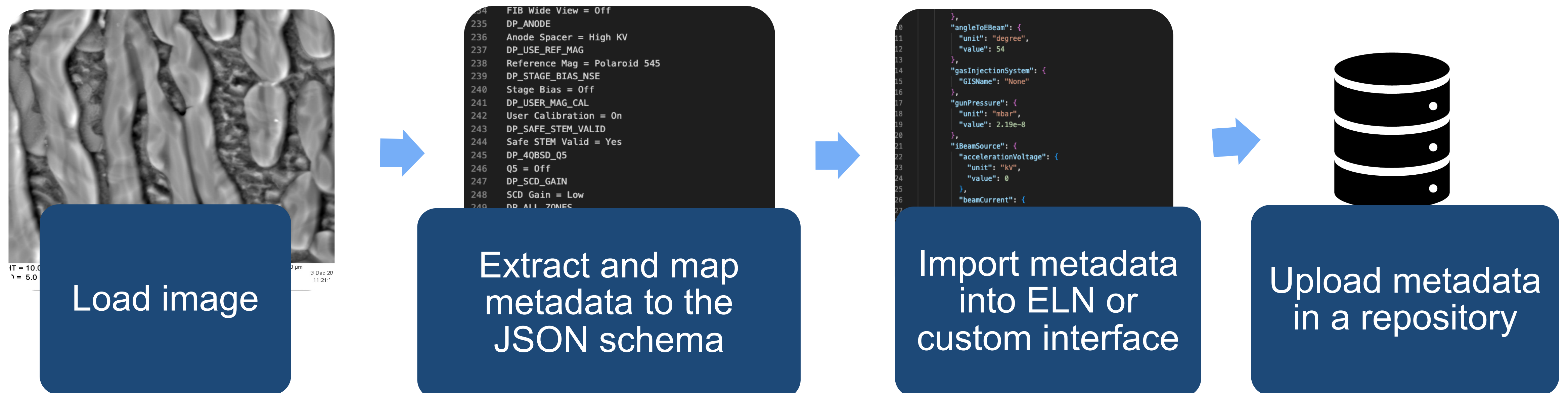


Fig. 3: Screen capture depicting the landing page of the Mapping Service (left). The mapping schema to use is chosen and a file uploaded to achieve the desired metadata documents. Generated metadata document in JSON format (right).

Advantages

- Reduces manual data input by mitigating labour-intensive tasks, minimizing errors, and ensuring data accuracy.
- Transforms unstructured metadata embedded within TIFF into a structured and machine-readable JSON metadata document.

Custom Interface for viewing SEM JSON metadata: <https://kit-data-manager.github.io/Metadata-Schemas-for-Materials-Science/>
 GitHub Repository: <https://github.com/kit-data-manager/mapping-service>



Discover the Mapping Service with this QR code.