



MODAPTO [101091996]: Modular Manufacturing and Distributed Control via Interoperable Digital Twins



11.1.1 Creating and configuring a smart service profile

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Creating and configuring a smart service profile in the MODAPTO Service Catalogue involves defining comprehensive metadata that enables the service to be discovered and utilized by the Orchestrator. The process begins by accessing the Service Catalogue interface and selecting “Register a new service” from the main view.

The service profile configuration is divided into two main sections: generic information applicable to all services, and type-specific details that vary based on the service type selected.

Generic Service Profile Information

For all service types, the following information must be provided:

- **Service Name:** A clear, descriptive name for the service
- **Logo:** An optional visual identifier for the service
- **Short Description:** A concise summary that appears in the service card on the main grid
- **Long Description:** Detailed information about the service in rich text format
- **Source Link:** Optional link to the service source code or documentation
- **Affiliation:** The company or organization associated with the service, including contact information
- **Keywords:** Terms that help categorize and discover the service

Critically important is the specification of input and output formats using standardized AAS JSON structure:

- **Inputs:** Defined as individual SubmodelElements with properties including modelType, idShort, and valueType
- **Outputs:** Defined as an array of SubmodelElements following the same structure

Type-Specific Configuration

Depending on the service type selected, additional configuration is required:

1. **FMU Service:**
 - Upload a ZIP file containing the service code in standard FMU format
2. **External Service:**
 - Endpoint URL for the REST service
 - HTTP Method (GET, POST, PUT, DELETE)
 - Additional Headers if required
 - Payload specification for methods that require body content
 - Optional output mapping from service response to AAS format
3. **Internal Service:**
 - Docker image repository location
 - Container port to expose
 - Relative endpoint path
 - HTTP Method and other REST details similar to External services



4. **Orchestrated Service:**

- Microservice ID reference to the specific service in the Orchestrator
- Operation ID reference to the specific operation within that microservice

Once configured, the service profile is saved in the Service Catalogue, making it available for discovery and integration into orchestrated workflows by the Orchestrator component.

References

1. MODAPTO Consortium. (2023). Service Catalogue User Manual. MODAPTO Project Documentation.
2. Industrial Digital Twin Association. (2022). Asset Administration Shell Specification. <https://industrialdigitaltwin.org/content-hub/>
3. Functional Mock-up Interface. (2021). FMI Standard Specification. <https://fmi-standard.org/>