EtherCAT Device Protocol

Module Description

The ESM provides a service structure for any EtherCAT slave data. For each type of data (differential or index registers), a 
process data buffer is available. Each index register is a virtual memory area that allows for read/write access. The ESM
provides a service for reading and writing to these virtual memory areas.

Function Description

The ESM supports the following functions:

- **Process Data:** Provides access to the process data buffer for read/write operations.
- **CoE Base Data Types:** Supports the CoE Base Data Types for data exchange.
- **CoE Services:** Supports the CoE Services for application-specific data exchange.
- **CoE Reference:** Provides a reference for the CoE Services.

Communication Area

The Communication Area is divided into two parts:

- **Process Data:** Contains the process data buffer for read/write operations.
- **CoE Service:** Contains the CoE Service data for application-specific data exchange.

Terminal Mapping

- **Terminal:** Provides a mapping for the terminal data in the Communication Area.
- **PDO:** Provides a mapping for the PDO in the Communication Area.

PDO Mapping

- **PDO:** Provides a mapping for the PDO in the Communication Area.
- **Control:** Provides a mapping for the control data in the Communication Area.

CoE Service Mapping

- **CoE Service:** Provides a mapping for the CoE Service data in the Communication Area.
- **CoE Reference:** Provides a reference for the CoE Service data.

Data Transfer

- **Data Transfer:** Provides a mapping for the data transfer in the Communication Area.
- **Data Reference:** Provides a reference for the data transfer.

**Reference:** ETG 1000-4 EtherCAT Data Model