SEMI E142.2-1016 (Reapproved 0224)
SPECIFICATION FOR SECS II PROTOCOL FOR SUBSTRATE MAPPING

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1 Purpose

1.1 This Specification maps the services of SEMI E142 to SECS II Streams and Functions and data definitions.

2 Scope

2.1 This Specification will identify the messages within the SECS/GEM message set used in the implementation of the substrate mapping services defined in SEMI E142.

2.2 This Specification applies to all implementations of SEMI E142 that use the SECS II message protocol (SEMI E5).

2.3 The MapData parameter specified in the SEMI E142 services is a single variable that complies with the SEMI E142.1 XML Schema.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 None.

4 Referenced Standards and Documents

4.1 *SEMI Standards and Safety Guidelines*

SEMI E5 — Specification for SEMI Equipment Communications Standard 2 Message Content (SECS-II)

SEMI E30 — Specification for Generic Model for Communication and Control of Manufacturing Equipment (GEM)

SEMI E39 — Specification for Object Services: Concept, Behavior and Services

SEMI E39.1 — Specification for SECS II Protocol for Object Services (OSS)

SEMI E40 — Specification for Processing Management

SEMI E90 — Specification for Substrate Tracking

SEMI E142 — Specification for Substrate Mapping

SEMI E142.1 — Specification for XML Schema for Substrate Mapping

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

5 Terminology

5.1 None.

6 Ordering Information

6.1 None.

7 Requirements

7.1 *Equipment Communication*

7.1.1 Communication of maps data items between host and equipment shall use the SECS I or HSMS protocols.

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7.2 *Services Mapping*

7.2.1 The services shall use the SEMI E39.1 Object Services for the MapDownload service and SEMI E5 Data Collection Streams and Functions for the MapUpload service.

7.2.2 Equipment may or may not support the Dynamic Event Report Configuration capability defined in SEMI E30.

7.2.2.1 Table 1 shows the specific SECS II streams and functions that shall be used for the SECS II implementation of the services defined in SEMI E142.

Table 1 Service Message Mapping Table

Service Name	*Stream, Function*	*SECS II Message Name*
MapDownload	S14,F1/2	Object Services (SEMI E39.1) – GetAttr Request/GetAttr Data
MapUpload	S6,F11	Data Collection (SEMI E5) – Event Report Send

7.3 *Download Service*

7.3.1 This service shall use the SEMI E39.1 Object Services Streams and Functions to download MapData for a single substrate. The MapData is returned as a single value formatted according to the SEMI E142.1 XML Schema.

7.3.2 Table 2 maps the service parameters defined in SEMI E142 to the SECS II Data Items used along with their SECS II Type and value range.

Table 2 Map Download Service Parameter Mapping Table

Parameter Name	*Required*	*Data Item*	*SECS II Type and Range*
-	Y	OBJSPEC	Not used.
-	Y	OBJTYPE	='Substrate'
SubstrateId	Y	OBJID	20. Identifier of substrate
SubstrateType	Y	ATTRID	20. Type of substrate
MapData	Y	ATTRDATA	10. Requested data formatted in XML according to the SEMI E142.1 XML Schema for the specified SubstrateId (OBJID) and SubstrateType filter.

7.4 *Upload Service*

7.4.1 This service uses the SEMI E30 GEM Event Reporting. The event report setup (i.e. allocation of CEID, RPTID, VID and the linkage between them) may be pre-defined for the equipment or configured dynamically. Dynamic event report configuration is beyond the scope of this Document.

7.4.2 The MapData parameter is sent as a single value formatted according to the SEMI E142.1 XML Schema. The MapData parameter may contain one substrate map or a group of substrate maps.

7.4.3 The MapData upload report should be linked to a substrate processing event such as process job complete, stopped or aborted (SEMI E40), or substrate processing complete (SEMI E90), or a custom event defined by the equipment.

7.4.4 Table 3 maps the service parameters defined in SEMI E142 to the SECS II Data Items used along with their SECS II Type and value range.

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