The Hermes Standard
for "M-to-M" in SMT Assembly

The Hermes Standard Change Proposal

Remove BoardIdCreatedBy from StartTransport, StopTransport, TransportFinished

Voting meeting:
13th of November (Productronica / Munich)

Requesting company:
ASM AS GmbH

Service description tag:

- (Revision of V1.0)

Description:

This proposal has as pre-requisite that the BoardId be a Globally Unique Identifier (GUID/UUID) according to https://de.wikipedia.org/wiki/Universally_Unique_Identifier (addressed in another proposal).

If that is the case, then the BoardIdCreatedBy data in the messages StartTransport, StopTransport, TransportFinished (The Hermes Standard 3.10, 3.11 and 3.12 respectively) is obsolete.

Note that BoardIdCreatedBy shall remain in the BoardAvailable message as an important indicator of where the BoardId was originally assigned.

Use cases:

Originally, the BoardId was only unique in conjunction with BoardIdCreatedBy. With a GUID as BoardId, the rationale for having the BoardIdCreateyBy in those three messages is no longer valid.

Functionality / communication sequences:

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New / changed XML messages:

StartTransport, StopTransport, TransportFinished

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Proposed changes to standard:

3 Message definition

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3.10 StartTransport

The StartTransport message is sent to the upstream machine to initiate the PCB handover process. There is no response to this message.

StartTransport	Type	Range	Optional	Description
◆BoardId	string	GUID	no	The ID of the board for which the transport shall be started.
◆BoardIdCreatedBy	string	non-empty string	no	MachineId of the machine which created the BoardId (the first machine in a consecutive row of machines implementing this protocol). The MachineId is part of the Hermes configuration.
◆ConveyorSpeed	float	positive numbers	yes	Optional parameter indicating the selected conveyor speed for the handover in millimeter per second

The downstream machine is responsible for selecting the actual conveyor speed according to the preferred conveyor speed sent in the BoardAvailable message. In general the highest possible speed supported by both machines will be selected.

If a StartTransport message is received for a BoardId and BoardIdCreatedBy combination which is not the one received with the last BoardAvailable message, the transport shall be canceled. This case is not to be treated as a protocol error.

3.11 StopTransport

The StopTransport message is sent by the downstream machine after it has finished the transport.

StopTransport	Type	Range	Optional	Description
◆TransferState	int	1 .. 3	no	See list below for possible values
◆BoardId	string	GUID	no	The ID of the board to which the message relates to
◆BoardIdCreatedBy	string	non-empty string	no	MachineId of the machine which created the BoardId (the first machine in a consecutive row of machines implementing this protocol). The MachineId is part of the Hermes configuration.

Transfer states:
1 NotStarted: The PCB never left and hence is fully inside the upstream machine.
2 Incomplete: The transfer was cancelled in progress.
3 Complete: The transfer ended successfully.

If the BoardId does not match the one from StartTransport, this shall be treated as a protocol error: hence the connection would need to be re-established.

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3.12 TransportFinished

The TransportFinished message is sent by the upstream machine after it finished the transport.

TransportFinished	Type	Range	Optional	Description
♦TransferState	int	1 .. 3	no	See list below for possible values
♦BoardId	string	GUID	no	The ID of the board to which the message relates to
♦BoardIdCreatedBy	string	non-empty string	no	MachineId of the machine which created the BoardId (the first machine in a consecutive row of machines implementing this protocol). The MachineId is part of the Hermes configuration.

Transfer states:
1. NotStarted: The PCB never left and hence is fully inside the upstream machine.
2. Incomplete: The transfer was cancelled in progress.
3. Complete: The transfer ended successfully.

If the BoardId does not match the one from StartTransport, this shall be treated as a protocol error; hence the connection would need to be re-established.

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