**HERMES 1.6 support QueryHermesCapabilities / SendHermesCapabilities**

**Proposal to support querying and sending Hermes Capabilities on Hermes Vertical**

Evaluating the Hermes capabilities of a machine to support certain use cases based on Hermes data is difficult. Some messages are optional, and a lot of attributes are optional as well.

A Machine Hermes Data Sheet may help to decide about feasibility of a certain use case, but to ensure proper operation a verification of a machine’s Hermes capabilities at runtime is mandatory.

This can be achieved by two new Hermes Vertical messages:

1. QueryHermesCapabilities – an application queries a machine about its Hermes capabilities
2. SendHermesCapabilities – a machine replies with its capabilities to a previous inquiry

**Modelling of the two new Messages**

*QueryHermesCapabilities* does not have any attributes.

*SendHermesCapabilities* sends a list of supported optional messages (array of XML tags with the names of the supported messages) and a list of attributes and how they are supported.

The type of support of attributes is encoded bit-wise:
1 ‘p’ machine passes on attribute or ‘-‘ if it does not pass it on
2 ‘u’ machine updates attribute or ‘-‘ if it does not update
4 ‘r’ machine reacts to attribute or ‘-‘ if it does not react

Examples:
[--p] Pass on attribute 🡪 1
[r-p] React on attribute and pass on attribute 🡪 5
[rup] React and update attribute and send updated attribute 🡪 7

If an attribute is not listed in the list of attributes or if its type of support is 0 [---], this attribute is not supported by this machine.

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| **SendHermesCapabilities** | **Type** | **Range / Multiplicity** | **Optional** | **Description** |
| folderOptionalMessages | Message [] | 0 .. n | no | List of supported messages |
| folderAttributes | list |  | no | List of attributes and their type of support |
| nodeProductTypeId | int | 0 .. 7 | no | type of support for ProductTypeId |
| nodeTopBarcode | int | 0 .. 7 | no | type of support for TopBarcode |
| nodeBottomBarcode | int | 0 .. 7 | no | type of support for BottomBarcode |
| nodeLength | int | 0 .. 7 | no | type of support for Length |
| nodeWidth | int | 0 .. 7 | no | type of support for Width |
| nodeThickness | int | 0 .. 7 | no | type of support for Thickness |
| nodeConveyorSpeed | int | 0 .. 7 | no | type of support for ConveyorSpeed |
| nodeTopClearanceHeight | int | 0 .. 7 | no | type of support for TopClearanceHeight |
| nodeBottomClearanceHeight | int | 0 .. 7 | no | type of support for BottomClearanceHeight |
| nodeWeight | int | 0 .. 7 | no | type of support for Weight |
| nodeWorkOrderId | int | 0 .. 7 | no | type of support for WorkOrderId |
| nodeBatchId | int | 0 .. 7 | no | type of support for BatchId |
| nodeRoute | int | 0 .. 7 | no | type of support for Route |
| nodeAction | int | 0 .. 7 | no | type of support for Action |
| nodeSubBoards | int | 0 .. 7 | no | type of support for SubBoards |

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| **Message** | **Type** | **Range / Multiplicity** | **Optional** | **Description** |
| folderMessageCheckAliveResponse | MessageCheckAliveResponse | 1 | yes | Indication of CheckAliveResponse message implementation. |
| folderMessageBoardForecast | MessageBoardForecast | 1 | yes | Indication of BoardForecast message implementation. |
| folderMessageQueryBoardInfo | MessageQueryBoardInfo | 1 | yes | Indication of QueryBoardInfo message implementation. |
| folderMessageSendBoardInfo | MessageSendBoardInfo | 1 | yes | Indication of SendBoardInfo message implementation. |
| folderMessageBoardArrived | MessageBoardArrived | 1 | yes | Indication of BoardArrived message implementation. |
| folderMessageBoardDeparted | MessageBoardDeparted | 1 | yes | Indication of BoardDeparted message implementation. |
| folderMessageQueryWorkOrderInfo | MessageQueryWorkOrderInfo | 1 | yes | Indication of QueryWorkOrderInfo message implementation. |
| folderMessageReplyWorkOrderInfo | MessageReplyWorkOrderInfo | 1 | yes | Indication of ReplyWorkOrderInfo message implementation. |
| folderMessageCommand | MessageCommand | 1 | yes | Indication of Command message implementation. |