## Board IDs

Board individuals are identified by board IDs. These must be Globally Unique Identifiers (GUIDs) according to [ITU-T\_REC\_X.667], e.g. 123e4567-e89b-12d3-a456-426655440000. They are generated by the first machine in a consecutive row of machines implementing the Hermes protocol. The board ID is passed from machine to machine. If a machine in a line does not implement the Hermes protocol, the board ID is lost and a new one will be generated by the next machine implementing Hermes.

## 3.6 BoardAvailable

The BoardAvailable message is sent to the downstream machine to indicate the readiness of the upstream machine to handover a PCB. When an optional attribute is received from an upstream machine, then it must be passed on (possibly altered) to the next downstream machine.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **BoardAvailable** | **Type** | **Range** | **Optional** | **Description** |
| nodeBoardId | string | GUID | no | Indicating the ID of the available board |
| nodeBoardIdCreatedBy | 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. |
| nodeFailedBoard | int | 0 .. 2 | no | A value of the list below |
| nodeProductTypeId | string | any string | yes | Identifies a collection of PCBs sharing common properties |
| nodeFlippedBoard | int | 0 .. 2 | no | A value of the list below |
| nodeTopBarcode | string | any string | yes | The barcode of the top side of the PCB |
| nodeBottomBarcode | string | any string | yes | The barcode of the bottom side of the PCB |
| nodeLength | float | positive numbers | yes | The length of the PCB in millimeter. |
| nodeWidth | float | positive numbers | yes | The width of the PCB in millimeter. |
| nodeThickness | float | positive numbers | yes | The thickness of the PCB in millimeter. |
| nodeConveyorSpeed | float | positive numbers | yes | The conveyor speed preferred by the upstream machine in millimeter per second |

GUID must match the regular expression

[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}

FailedBoard may be one of the following values:

1. Board of unknown quality available
2. Good board available
3. Failed board available

FlippedBoard may be one of the following values:

1. Side up is unknown
2. Board top side is up
3. Board bottom side is up

If FlippedBoard is 2 (Board bottom side is up) then TopBarcode is facing downwards and BottomBarcode is facing upwards.

The definition of board bottom and board top side is outside of the scope of The Hermes Standard and left to the customer.

## 4.3 References

|  |  |
| --- | --- |
| [IPC\_SMEMA\_9851] | IPC-SMEMA-9851 Mechanical Equipment Interface Standard |
| [ISO\_7498-1] | ISO/IEC IS 7498-1: Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model. 1996 |
| [IETF\_RFC\_791] | Internet Engineering Task Force: RFC791: Internet Protocol. September 1981 |
| [IETF\_RFC\_2460] | Internet Engineering Task Force: RFC791: Internet Protocol, Version 6 (IPv6). September 1998 |
| [IETF\_RFC\_793] | Internet Engineering Task Force: RFC793: Transmission Control Protocol. September 1981 |
| [ITU-T\_REC\_X.667]  [W3C\_XML\_1.1] | International Standard "Generation and registration of Universally Unique Identifiers (UUIDs) and their use as ASN.1 Object Identifier components  Extensible Markup Language (XML) 1.1 (Second Edition) - W3C Recommendation 16 August 2006, edited in place 29 September 2006 |
| [W3C\_DATE\_TIME] | Date and Time Formats - W3C Recommendation 15 September 1997 |
| [W3C\_XML\_Schema] | XML Schema Part 2: Datatypes Second Edition - W3C Recommendation 28 October 2004 |