

Rosenberger

802.3da MDI Connector

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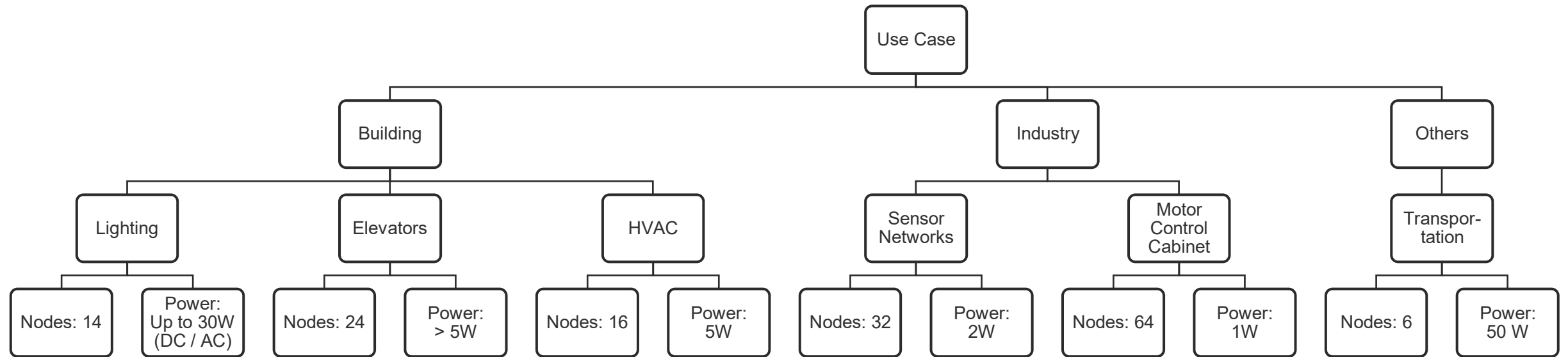


Purpose

Proposes a way to move forward with the MDI connector objective

Use Cases

Use cases picked from https://www.ieee802.org/3/SPMD/usecase/SPMD_Usecase_Library.pdf



- Use case requirements are heterogeneous
 - Not only for node count and power
 - Temperature, humidity, ease of field assembly, size constraints, EMC, ...

IEC 63171(-x) – Connectors for electrical and electronic equipment

Shielded or unshielded free and fixed connectors for balanced single pair data transmission with current-carrying capacity – General requirements and tests

Properties / Standard	IEC 63171-1	IEC 63171-2	IEC 63171-3	IEC 63171-4	IEC 63171-5	IEC 63171-6	IEC 63171-7
Initiator	CommScope	R&M	SIEMON	BKS	PxC	Harting	TE & PxC
Style	LC	Rectangular	CANCELED	Typ 4	M8 / M12	Rectangular M8 / M12 / M8 Hybrid	M12 Hybrid
Status	ED1 published, ED2 in progress	Published	CANCELED	FDIS	Approved FDIS	ED1 published, ED2 in progress	CDV
MICE	M ₁ I ₁ C ₁ E ₁	M ₁ I ₁ C ₁ E ₁	CANCELED	M ₁ I ₁ C ₁ E _{1/3}	M ₃ I ₃ C ₃ I ₃	Other Schema	
Application Field	Building	Building / Industry	CANCELED	Building / Data Center	Industry	Industry	Industry

Minimum electrical characteristics of all IEC63171-x are aligned within IEC63171

Further Figure of Merit

- All types are mainly based on the same electrical specifications
- In order to choose one type, various metrics beside electrical specification should be taken into account to choose the best suited type
 - Power
 - Switched Power
 - Shock and Vibration
 - Insertion Cycles
 - Temperature Range
 - In-Cabinet Density
 - On-Machine Density
 - Field Assembly
- There would be no type which is superior in all categories -> thus a weighting of the subjects would be required

Moving Forward

- Weighting of metrics might be depending on the different use cases and fields of application
 - Some fields of application might have different key aspects
 - We do not want to limit the fields of application without a very good reason
- Choosing one connector to fit all use cases might be very hard
- The transmission requirements from IEC 63171 ensure a functional link for all IEC 63171-x
- Proposal regarding the MDI Objective
 - Refer to IEC 63171-x, to allow the whole subset of interfaces, which are designed for SPE
 - Standardization of additional hybrid connectors (Power and Data) with different power classes on auxiliary wires is worked on and shall be standardized in IEC 63171-7
 - This new interface will be included automatically, when standard is released
 - Refer IEC 63171 on places where electrical parameters of the connectors are required (if there are any)
 - Use IEC 63171 limits of connectors to derive channel specification

Thank you for your attention!
Questions?