MGbps Link Segment open questions

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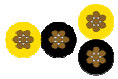
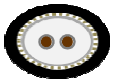
MGbps Options

When the study group project was set up at IEEE, it just defined MGbps Ethernet for automotive use. This gives many options:

Cable types

	UTP	STP	SPP*)	„Coax“	POF/GOF
One „pair“					
Two „pairs“					

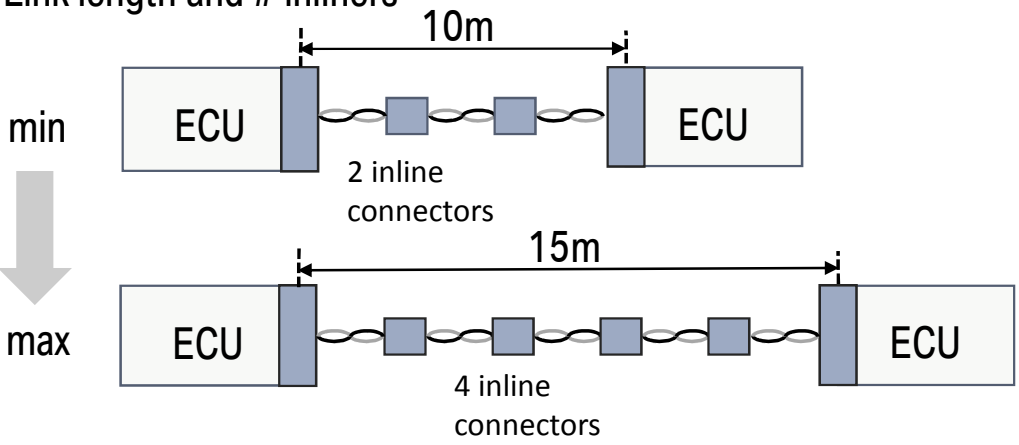
With/without jacket

Open: What impact do the different options have on the market potential?

Speed grades

2,5Gbps	5Gbps	10Gbps	4Gbps	6Gbps	etc.
Existing xMII specs.			No. available xMII spec.		

Link length and # inliners



*) SPP, Shielded Parallel Pair

Open Questions:

What combination of selections gives the most promising market potential? Needs answers on questions like:

- Will PHYs for different speed grades have distinctly different relative costs? Why? Where is the saving? How does it relate to 1000BASE-T1?
- When is a market large enough to justify a separate speed grade (use cases and market)?
- What cabling options are at all possible for the different speed grades?
- Different cabling options have different costs. However, less robust cables might lead to more effort in the PHY. How does that relate? Which aspect of the channel impact the costs of the PHY most?
- How much difference does it make for the effort in the system (PHY, cabling, …) if 4 inliners and 15m cable have to be met instead of 2 inliners and 10m cable?
- …

Automotive MGbps media options

	Cable	Connectors	Frequency limit	Comments
UTP	available	available		
UTP jacket	available	available	Used for 1000BASE-T1 @~700MHz	Starting point
STP	available	available	Similar to STQ?	
STQ	available	available	~3GHz	
SPP	available	available	Beyond 5GHz, up to 10GHz?	Less attenuation than STP because shorter
2xSPP	available	available	Similar to SPP?	
Coax	available	available	Cable specified up to 9GHz Connectors specified up to 15GHz	Current developments
Twinax	?	?	?	
GOF	?	?	?	
POF	available (POF)	available	500MHz	