HANDOUT

ECS 2023

TOGETHER AGAIN

WELCOME TO THE WORLD OF CONNECTIVITY

ESCHA



2019






NO WAR
WITH
IRAN


COVID-19
SARS-CoV-2
positiv
negativ

2020


ACCETTAZIONE


BERLIN BRANDENBURG AIRPORT
WILLY BRANDT


CORONA-MAßNAHMEN
SOFORT BEENDEN!
FREIES LEBEN OHNE IMPFZWANG

2021

2022

Welcome to today!

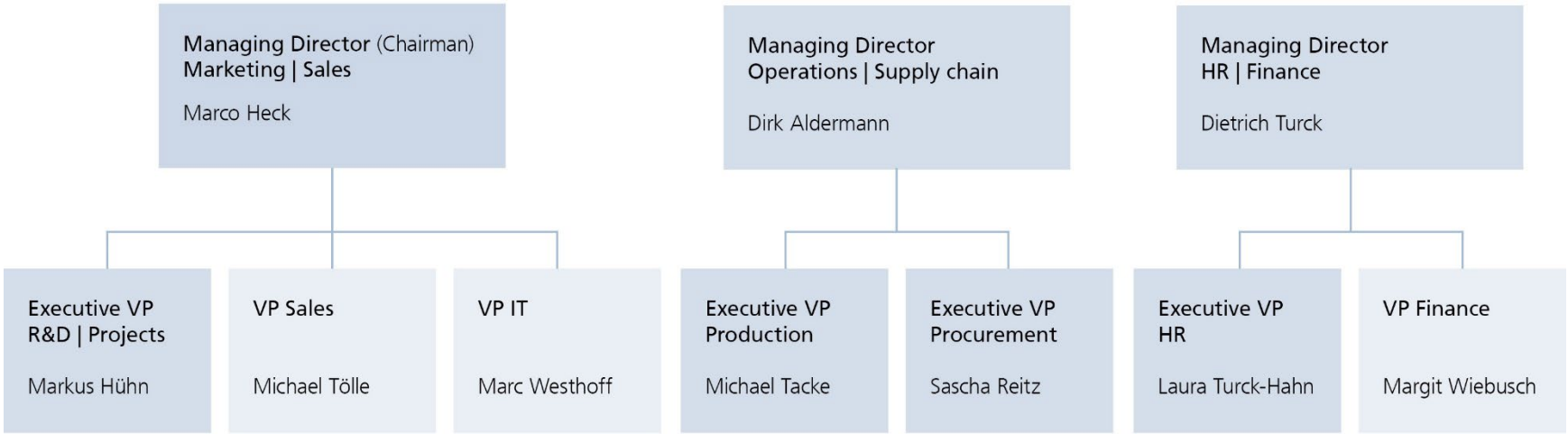
ESCHA status and outlook

- Budget 2023 shows +10% growth compared to 2022
- Low OI started with 2023, till today
- Q1 and Q2 turnover on budget
- Significant drop in turnover since Q3
- Short time work since Aug. 2023. Staying prepared!

Global Footprint

- EMEA – APAC – AMER (3 hubs)
- Follow international accounts (local for local)
- Staying with our partners abroad
- ESCHA US is delayed due to the economic situation
- ESCHA – TUSA (Turck Inc.) cooperation

ESCHA – Management | Responsibilities



Outlook

- Back to good performance
- Stable business in 2024 - growth in 2nd half of 2024
- Approaches | Products
  - Single Pair Ethernet (SPE)
  - Mobile Automation (DEUTSCH and more)
  - Railway
  - Renewables

SALES

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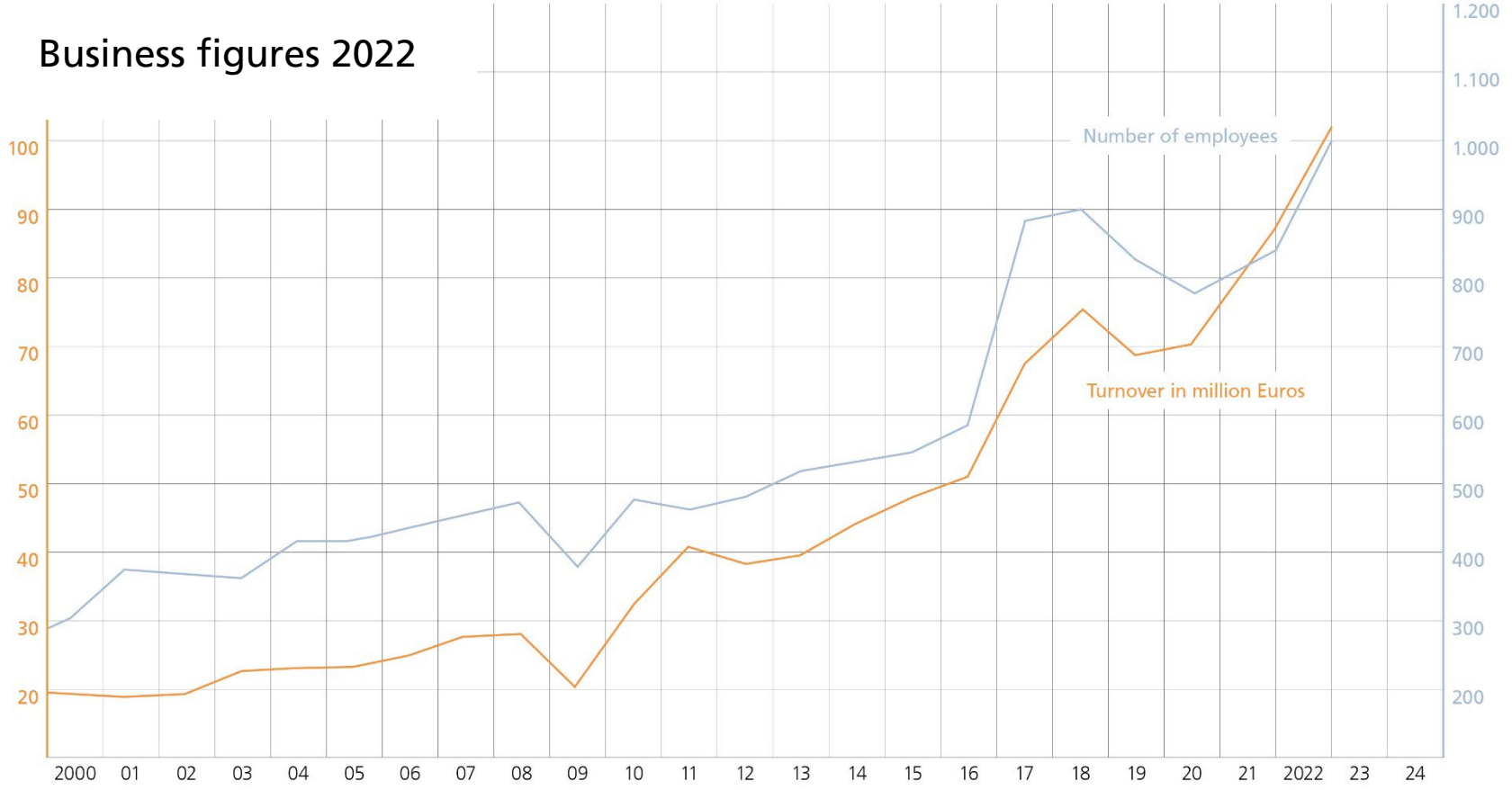
ESCHA Sales

- Development
- Megatrends
- Outlook

Business figures 2022



Business figures 2022

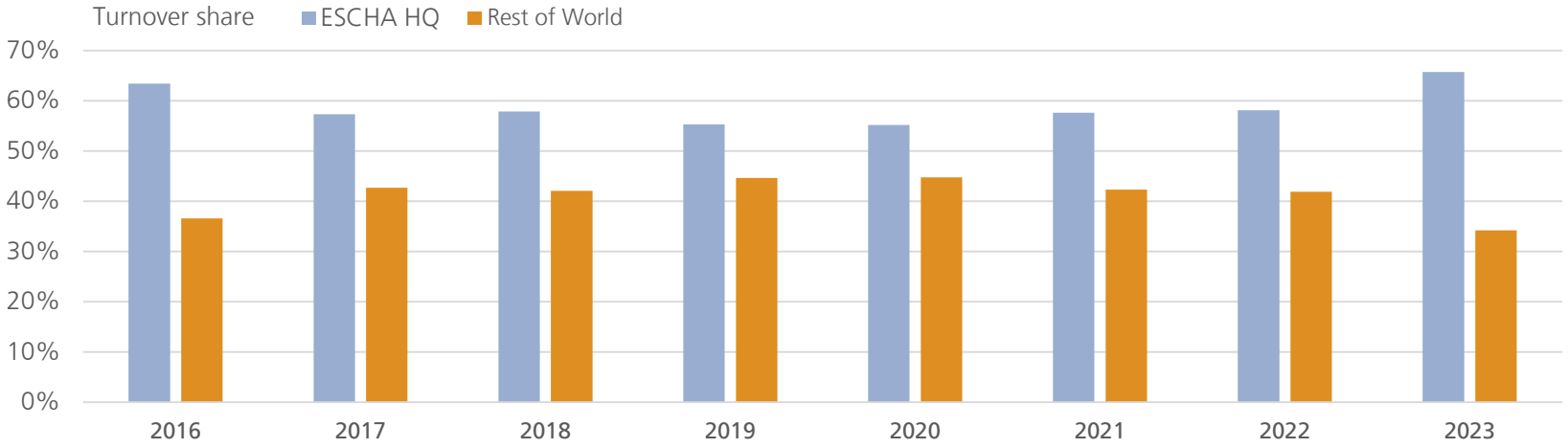
Content summary

- ESCHA growth from 2000 to 2016 very stable, reaching 50 MEUR and 600 employees
- From 2016 until today turnover doubled, reaching 100 MEUR and 1,000 employees
- ESCHA invested in infrastructure and manpower, to handle this tremendous growth
- 2023 second half ESCHA is facing a sudden downturn in turnover and will not reach 100 MEUR in 2023
- Focus on gaining market share and find and win new projects

Development

Turnover ratio – 2016 until year to date

	2016	2017	2018	2019	2020	2021	2022	2023
ESCHA HQ	63,41%	57,32%	57,92%	55,34%	55,24%	57,64%	58,11%	65,74%
Rest of World	36,59%	42,68%	42,08%	44,66%	44,76%	42,36%	41,89%	34,26%



Development

Content summary

- Interesting to see the development of turnover of ESCHA HQ (Germany and Austria) and Rest of World
- Turnover share of Rest of World countries grew steadily, until 2019 / 2020 reaching a max of approx. 45%
- After 2020 share of HQ reached up to 65% again
- Focus on gaining momentum and additional turnover outside of Germany and Austria
- Contact us with ideas, requests or needs to contribute to this goal

Megatrends

- Automation
- Artificial Intelligence
- Digitalization
- Electrification
- Sustainability

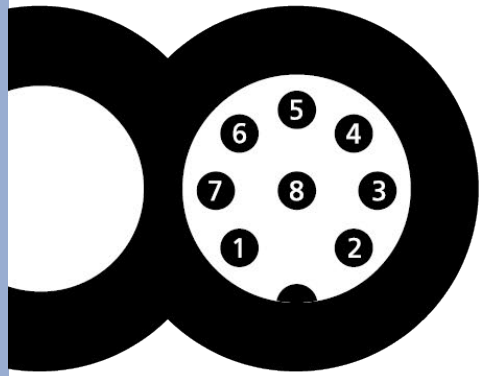
Megatrends

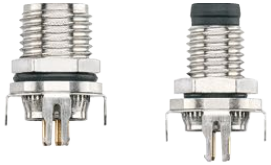
Content summary

- We are living in a century of change
- Automation, Artificial Intelligence, Digitalization, Electrification and Sustainability will support society
- ESCHA is providing solutions for all of these megatrends, as highlighted in the presentations and workshops
- Following slides summarize certain product news from the past months and provide a short outlook about new products to come

Megatrends

What does ESCHA provide?





M8

Megatrends

What does ESCHA provide?

Megatrends

What does ESCHA provide?

Megatrends

What does ESCHA provide?

Products to be released shortly

- 10/23 Shield cutting machine
- 01/24 RA valve connector
- 02/24 M12 SPE male connector
- 03/24 M8 SPE male connector
- 07/24 M8 & M12 female connector

Outlook

What does ESCHA request?

- Grow together
- Increase touch points
- Find more projects

Outlook

Content summary

- ESCHA wants to grow further, together with you, our Partners
- We want you to challenge us
- We are looking forward to receive more inquires
- We like to create more touch points and work on more leads, opportunities and projects
- We want to find the right customers for our solution business together with you
- Involve us when necessary, we are willing and happy to support from HQ or on customer site

Outlook

What is necessary to achieve goals together?

- What do you need to become more successful?
- Let us discuss!

SPE

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Topics

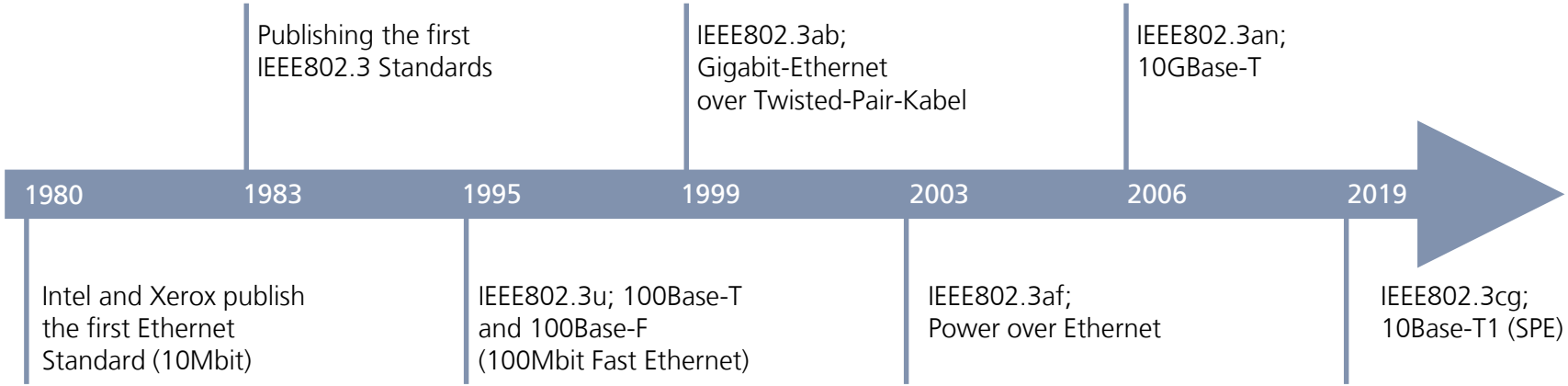
- Where does SPE come from?
- What is new on this technology?
- ESCHA strategy for SPE
- Expectations on this technology

Expectations on SPE

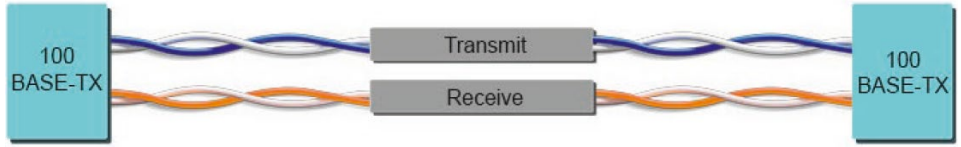
- Change of the whole communication structure
- Rapid growth of communication market
- Base for Industry 4.0 and IIoT

SPE is a major trend for our industry and ESCHA is well prepared.

History of Ethernet Standards IEEE802.3



Ethernet technologies

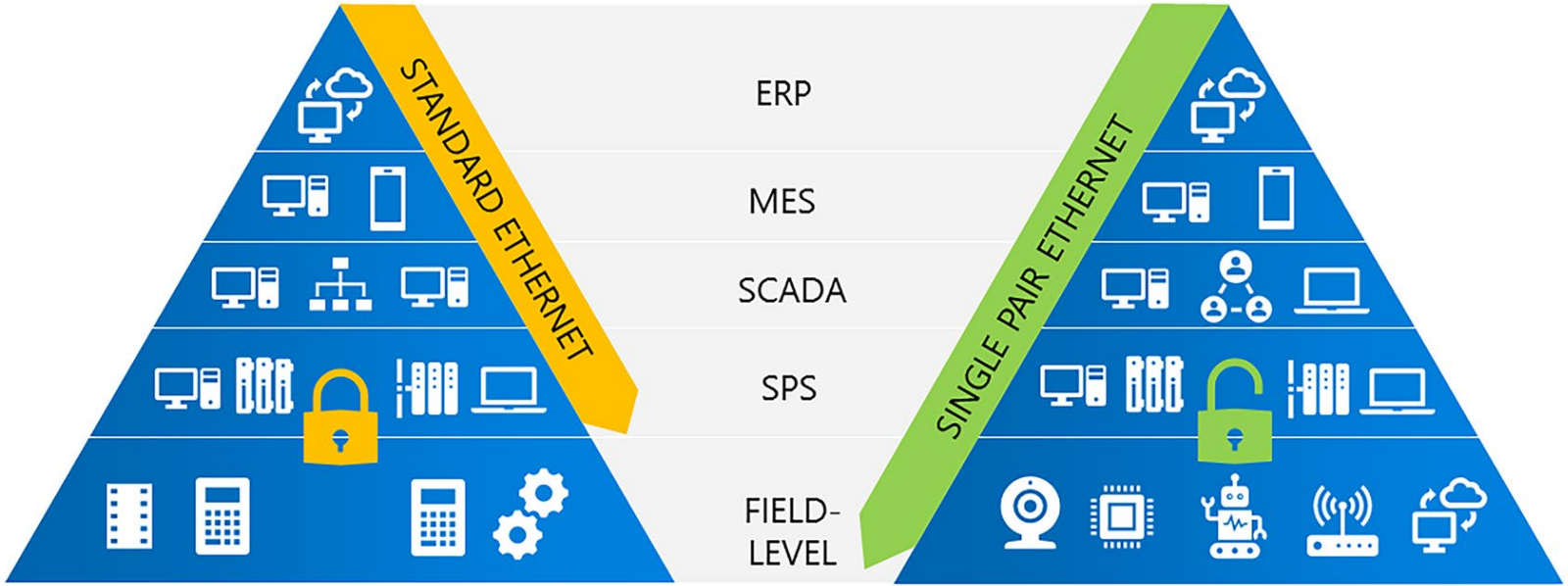


Fast Ethernet
100 MBit/s
twisted pair, unidirectional

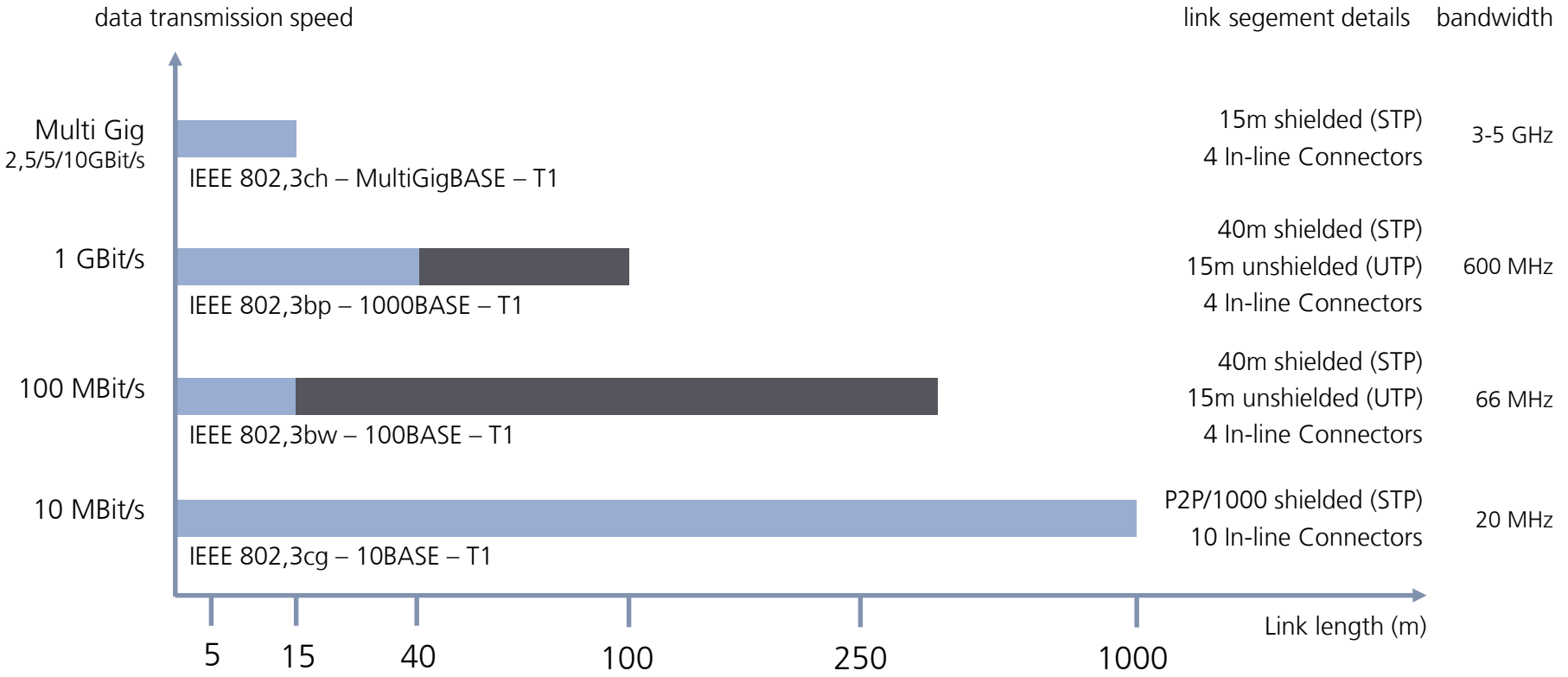
GBit Ethernet
250 MBit/s | 2.5 GBit/s
twisted pair, bi-directional

Single Pair Ethernet
100 MBit/s | 1 GBit/s
twisted pair, bi-directional

Communication structure change



Norming situation on SPE



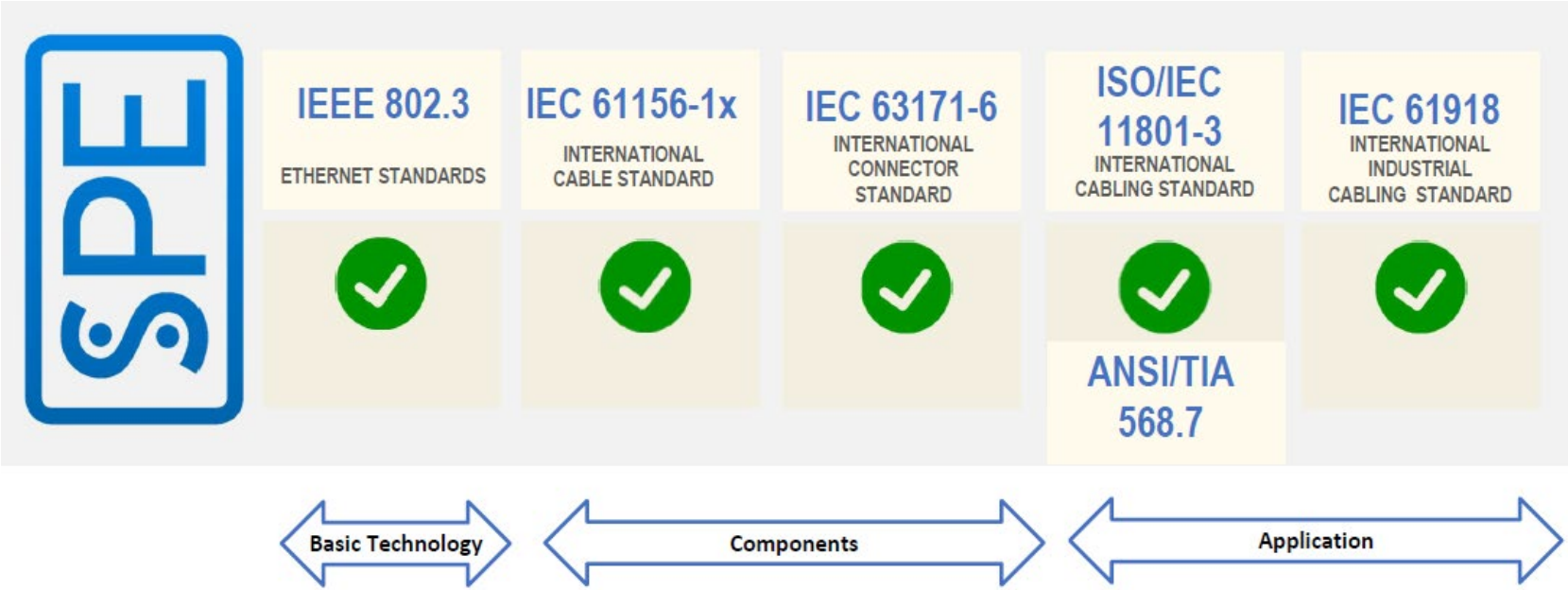
Norms for SPE connectors

IEC 63171-X

- IEC 63171-1 (CommScope, Building automation)
- IEC 63171-2 (Reichle & De-Massari, IP20)
- IEC 63171-3 (Norm with drawn)
- IEC 63171-4 (BKS)
- IEC 63171-5 (Phoenix)
- IEC 63171-6 (HARTING)
- IEC 63171-7 (Hybrid)

Norming relationships

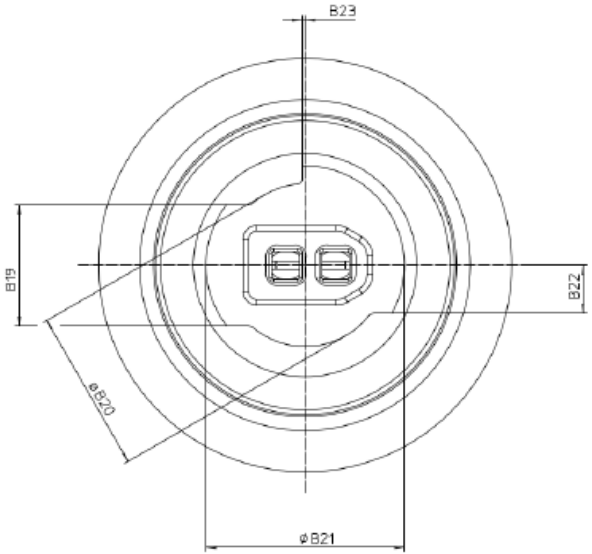
Pole position for IEC63171-6



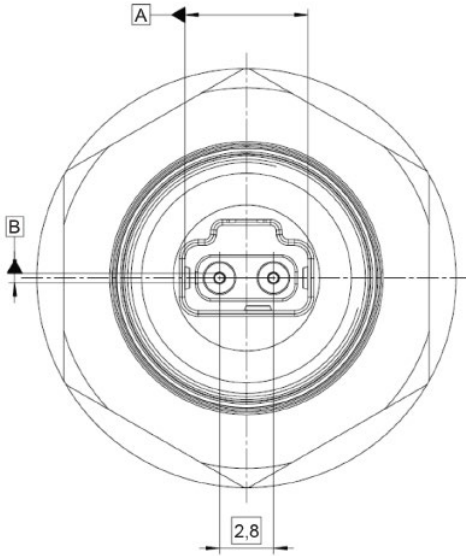
Competing norms for IP67-connectivety for automation industry

IEC 63171-X

-5 SPE System Alliance

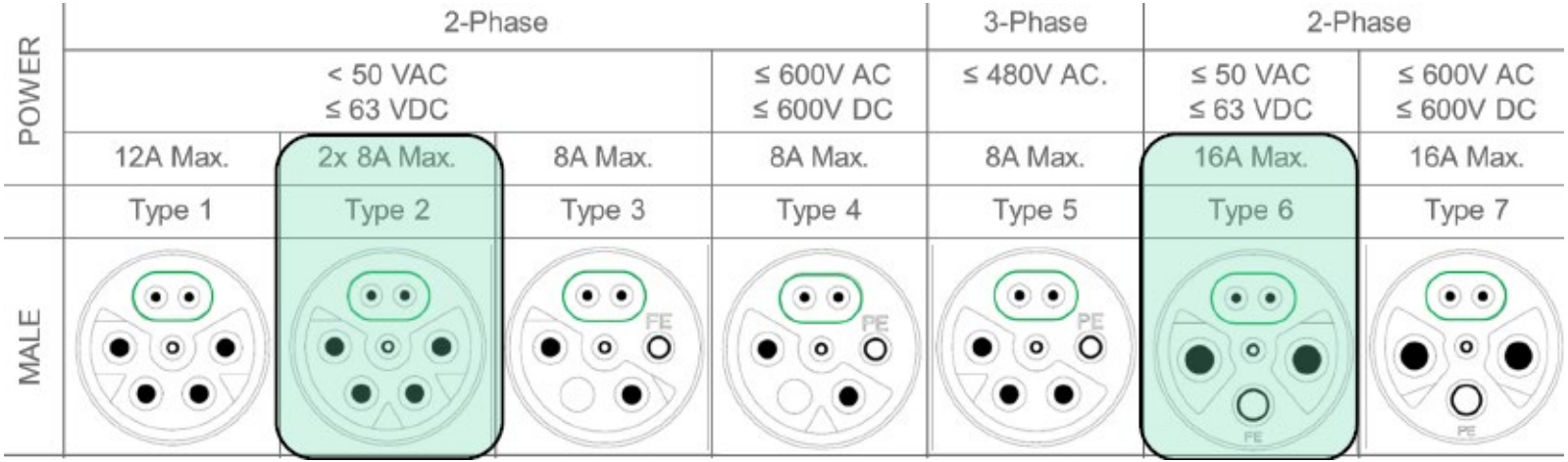


-6 SPE Industrial Partner Network



Hybrid SPE-connectors

- Data communication and power in one connector interface
- More power compared with PoDL
- One cable - one connector

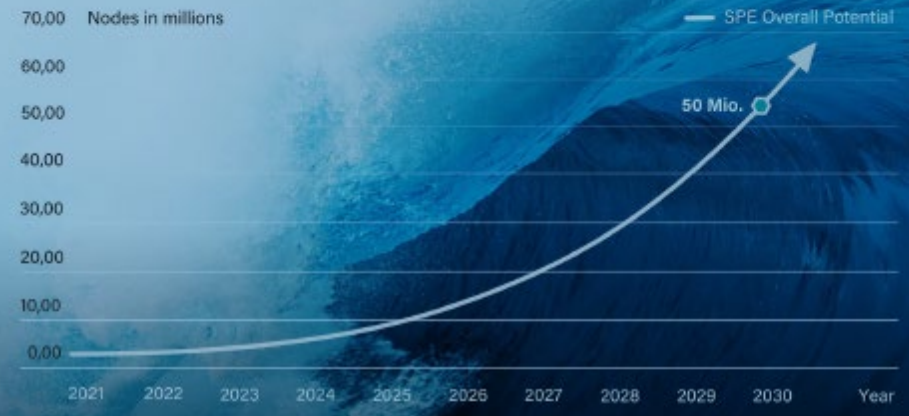


SPE – ESCHA connectivity

One of the first suppliers
for IP67 IEC63171-6 connectivity

UNSTOPPABLE

We are on the way to 50 million SPE nodes by 2030.
Be part of it!



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PNO Forum 2023

SUSTAINABILITY

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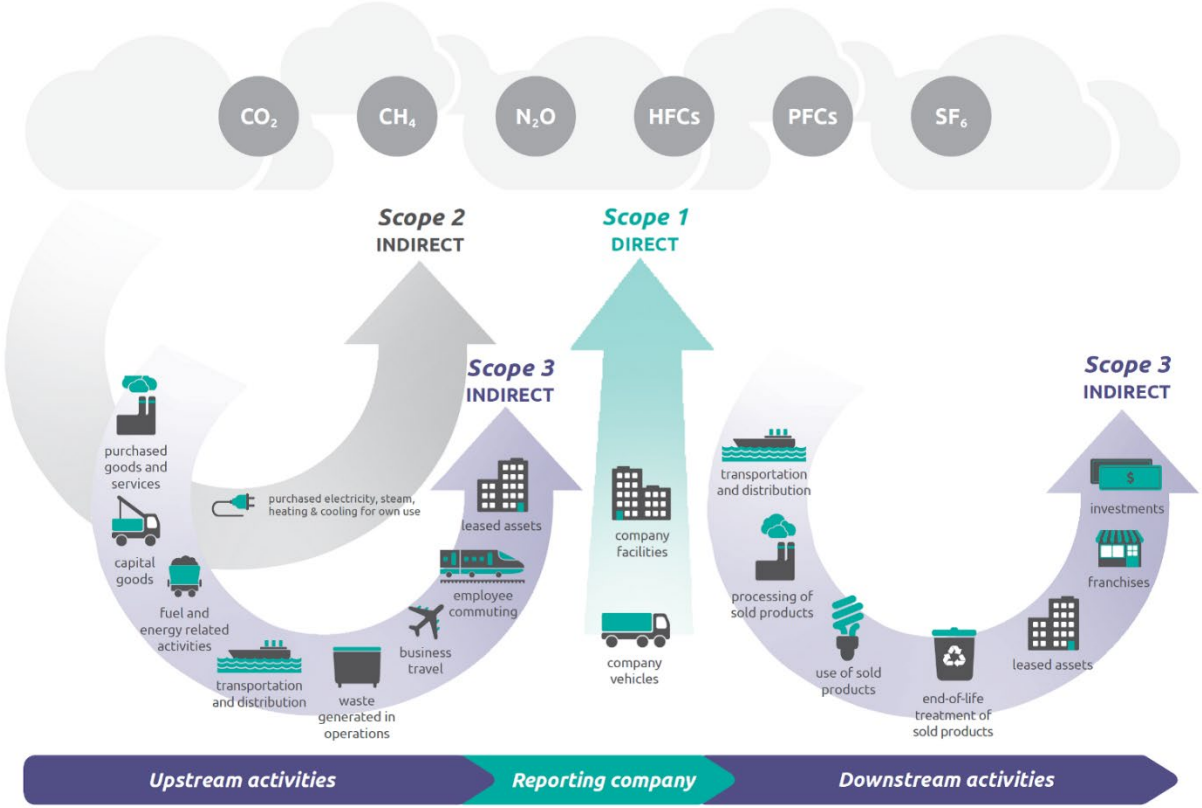
Introduction



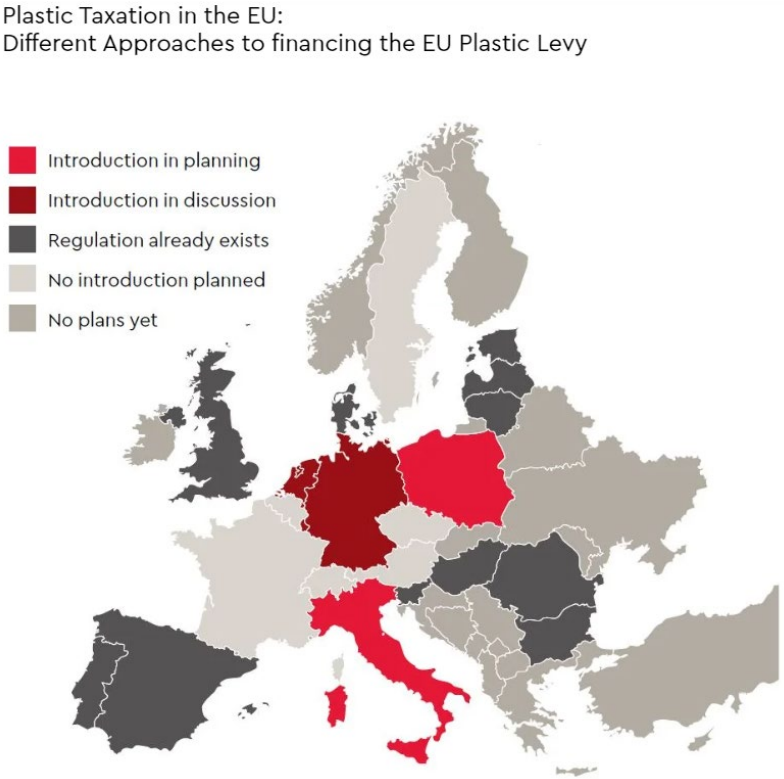
Scope 1

- ESCHA Carbon Footprint
- 21,06 % caused by LPG used for heating (only during non production time)

Scope 2

- 0,0 % emission in Scope 2 because our power supply is 100 % renewable energy.

Scope 3 – Packaging and EU Plastic Tax



- Patchwork of uncoordinated national rules
- Very different taxes and applications
- Unified EU law would reduce labour
- ESCHA commits to comply as much as possible
- Projects with external consultants
- E.g. reusable carton packaging for procured metal parts

Scope 3 – Molding materials and circular economy

Responsible and sustainable material usage requires recycling

- Recycling rate of steel is 90 to 95 %
- Recycling rate of plastic materials 14 to 30 %

The sustainable solution is regranulation and reusage instead of scrapping

LEAD FREE

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Changeover to „lead free“

- Why do we need to talk about „lead free“ nowadays?
- ESCHA strategy regarding „lead free“
- Current status
- Expectations to our sales partners

Why do we need to talk about „lead free“ nowadays?

Redesign RoHS-directive 2011/65/EU

- RoHS exemption 6c for copper-lead alloys
- Copper alloys with up to 4% lead allowed so far
- Officially, directive expired on 21 July 2021
- „Ökoinstitut“ assigned to gather arguments in order to extend the exemption
- The corresponding report was published in January 2022
- Recommended to extend RoHS exemption 6c until 21 July 2026

Why do we need to talk about „lead free“ nowadays?

Redesign RoHS-directive 2011/65/EU

- EU commission has not made any final decision
- The RoHS exemption 6c remains until the decision of the EU commission
- We expect this decision in summer 2023
- With final expiration a mass percentage of lead in copper alloys of only ≤ 0,1% is allowed

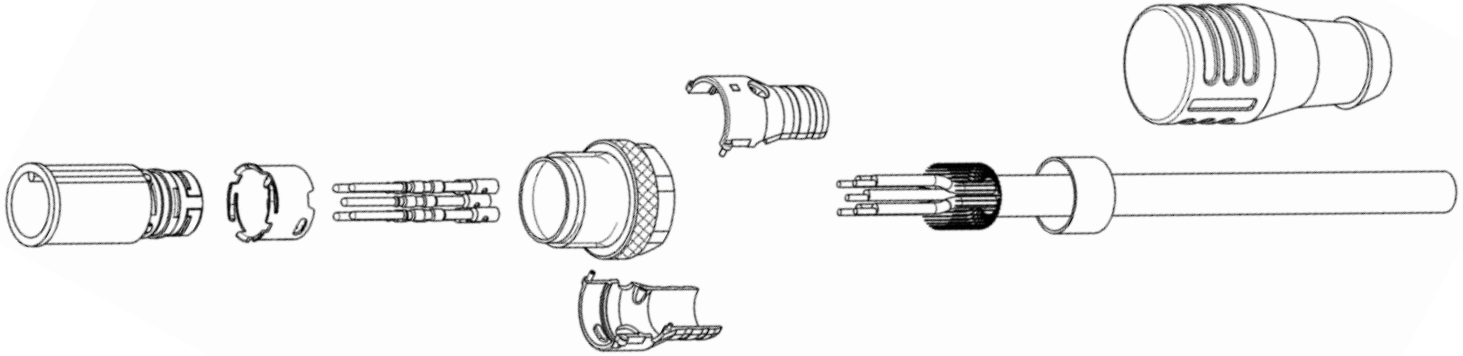
ESCHA strategy for „lead free“

Current actionplan

- Evaluation of all affected purchasing parts (coupling nuts, contacts, receptacles, etc.)
- Portfolio adjustment | Consolidation
- Evaluation and selection of lead free materials
  - CuZn40 (all contact-types)
  - CuZn21Si3P (receptacles, coupling nuts, etc.)
  - CuZn42 (still in validation as an additional alternative for CuZn21Si3P)

ESCHA strategy for „lead free“

Current actionplan



- Creation of new lead free alternative items
- Definition of a procedure for the transition to „lead free“
- Process customizing
- Rollout of transition

Current status

Timeline

- Master data for alternative lead free materials and drawings are revised
- The ERP customizing was scheduled for 24 July 2023
- Actually 667 individual parts with > 40.000 purposes are affected by the transition
- First materials are already ordered in lead free

Current status

Timeline

- In 07/2024 we will purchase only lead free individual parts from our suppliers
- Until 07/2025 a lot of items will be changed over to leadfree
  - The exact timeline & quantity depends on the stock turnover of leaded materials
- ESCHA products will be„lead free“ by the expected end of the exemption 6c on 21 July 2026

Sales issues

Impact of lead free materials on the end product ?

Price increased due to:

- Higher material costs
- Longer production times and shorter tool lifetime, due to the poor machinability
- Different materialflow for the chips recirculation needed

Maybe the price level will change in the future when more lead free material is in use.

Sales issues

- Sufficient “lead free” material availability
- Price development has to be considered on a case-by-case basis
- 40% purchasing prices for “lead free” items are available
- Existing suppliers are currently gaining experience in machining “lead free” material
- New suppliers have been requested and parts are being relocated
- All items will be completely re-sampled with “initial sample test report”
- With the changeover, the multi supplier strategy will be expanded

Expectations to our sales partners

- Please follow the ESCHA specifications and timeline
- Contact us in case of any questions or support
- Feedback regarding the situation to the market and customer responses

BRAID CUTTING MACHINE BC14

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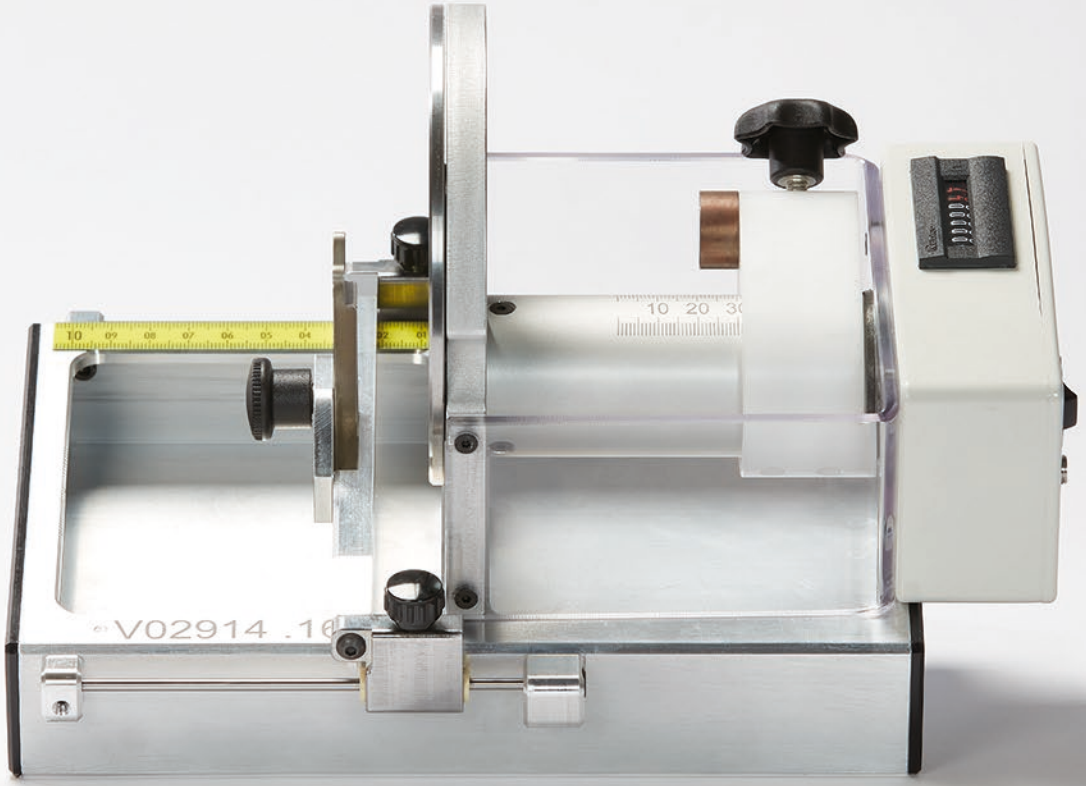
Braid Cutting Machine BC14

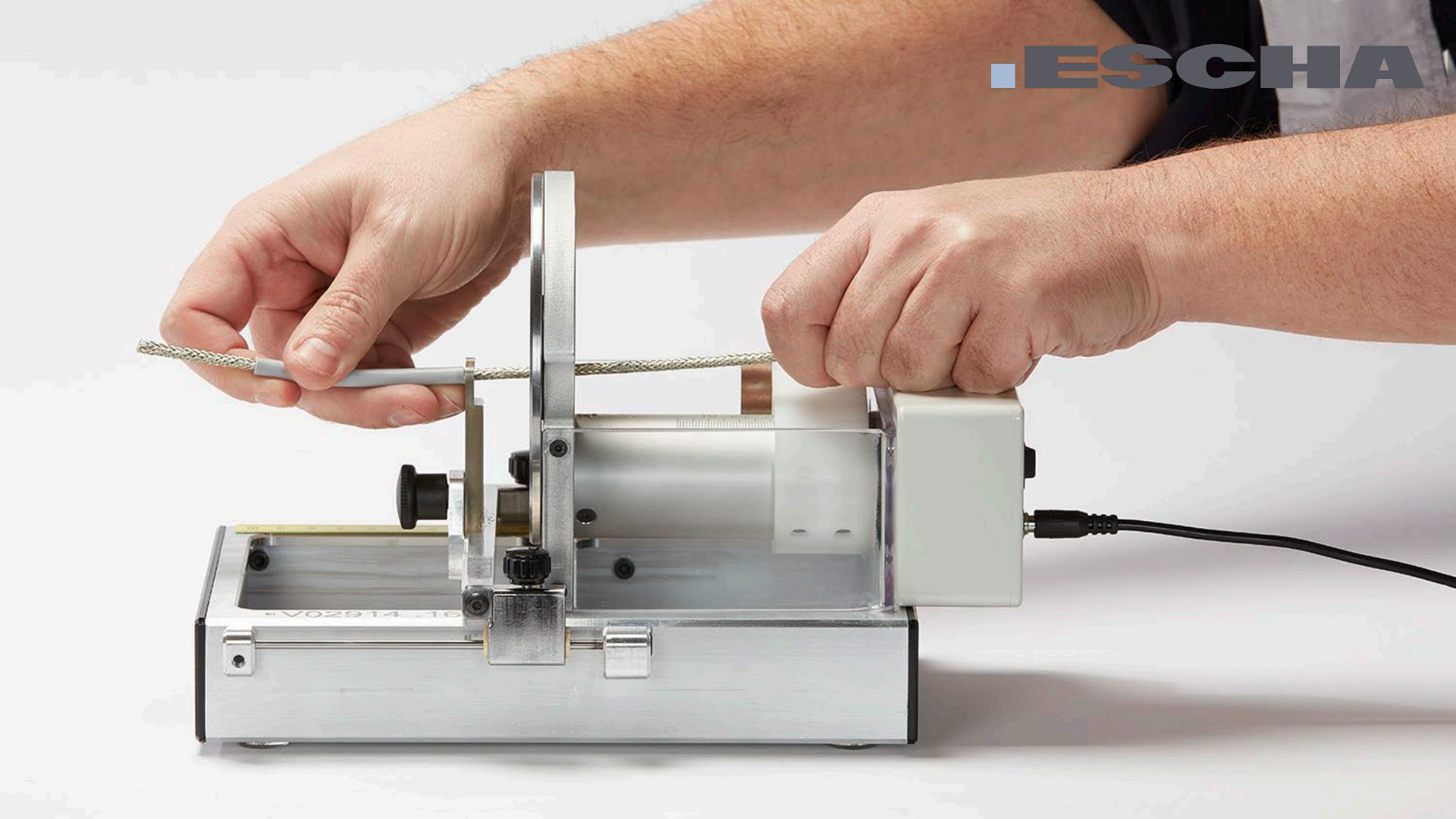
Technical features

- Copper braids or tinned copper braids can be processed
- max. braid-single-wire diameter: 0.2mm
- max. diameter above braid: 14mm
- Braid length to be machined: 2mm - 90mm
- Sample machines are available if required
- Item #8078854 | Braid cutting machine BC14
- Item #8078856 Blade-set BC14 (spare part)

ESCHA

ESCHA

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V02914.16


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Braid Cutting Machine BC14

…for more Informations

https://braidcut.escha.net/en/

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WORKSHOP – Mobile Automation

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Mobile Automation

Portfolio

M12x1 and valve plug connectors were already existing products in the ESCHA portfolio.
M12x1 products with stainless steel used in the branch and also plastic coupling nuts for a cost reduction if the customer requests. Due to the different colours of the plastic coupling nuts the user can differ several product lines. Further more all connectors are available with a M12x1-thread at the rear end of the overmolding to use a protection sleeve. Finally M12x1 connectors are also available with a lenght water tightness which is also very often asked for in that branch.

Mobile Automation

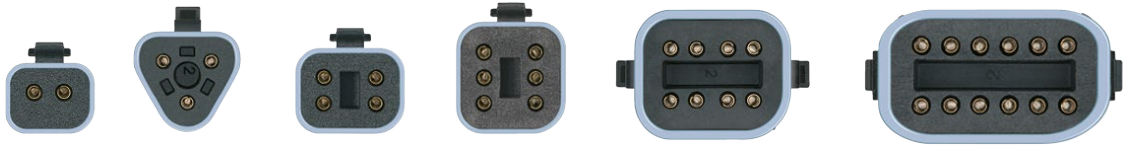
Deutsch DT

Because customers like plug´n play solutions the Mobile Automation branch uses Deutsch DT since a long time because it is very robust and therefore established for several years.

Due to the material situation in the market, ESCHA developed an independent solution from scratch. Development includes our own contacts and sealings.

Mobile Automation

Deutsch DT



female

male

2 3 4 6 8 12

As a strategy ESCHA decided to produce the whole connector in one shot process.
Besides all technical advantages for production automatically IP67, 68 and 69 without any additional efforts is given.
The ESCHA-standard cross-wire section is 0.75mm². The used contacts are feasible for 0.5 to 1mm². Due to a customer project meanwhile a contact for 0.25 and 0.34mm² are availbale.

Mobile Automation

Splitter

As you know ESCHA stands for high quality products and customized solutions.

This shielded Y-cable splitter is developed for a producer of cranes such as tower cranes and mobile cranes. Used in a CAN-application and needed our 360° shielding. The product is also very robust and has additional feature such as fixing possibility at the splitter body. Due to the topic that the initial customer does not want to have an exclusivity you can now order this product from the catalogue and can sell it also as a modified part based on the demands in the market.

Such a product with all these features does not exist in the market right now!

Mobile Automation

Possible new products

- DTM
- Superseal
- Junior Timer
- Splitter, Boxes

Now it is our sales job to find more and more customers in the field who uses these connectors for cranes, fire enginges, waste trucks, agricaltural machines, Electro busses and so on. Furthermore these customers use other interfaces like DTM, Superseal, and Junior Timer.

We can offer those with field wireable connectors as B-side preparation. If you bring high potential customers we perhaps also establish new connectors in an overmoulded version „tomorrow“.

Have a look on the advantages of cable harnesses for your customers with all these products included.

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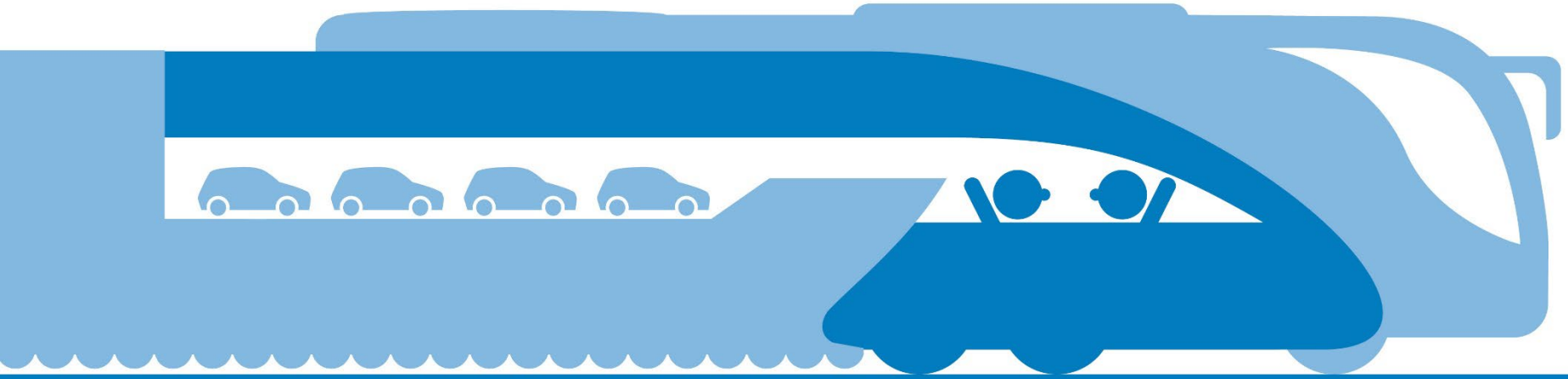
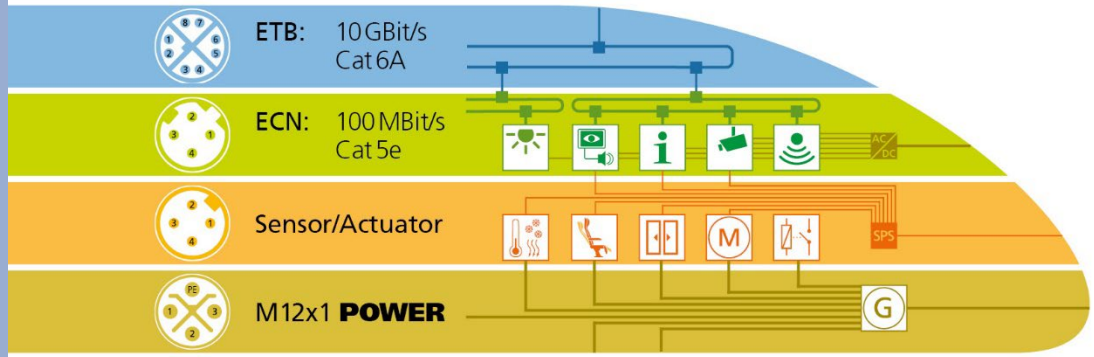
WORKSHOP – Transportation



.ESCHA

RAIL APPROVED

DIN EN 45545-2 HL3, DIN EN 50155

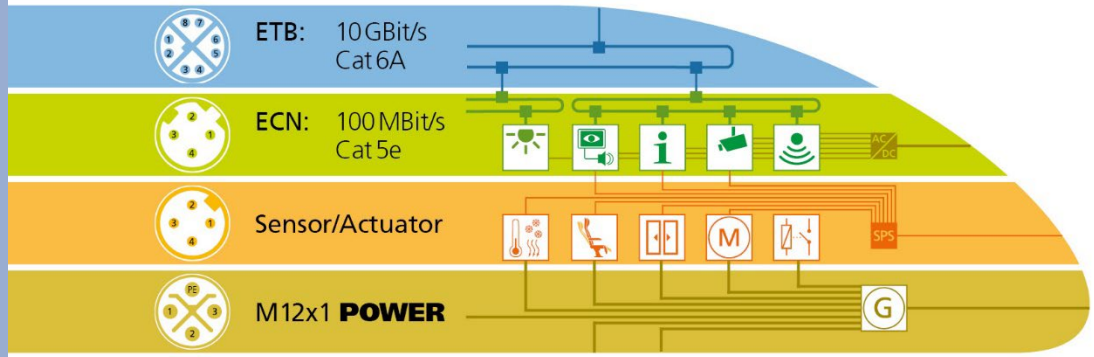


In the last years more and more countries are investing around train and bus. By 2050, The European Commission wants a 60% cut in transport-leaded greenhouse gas emissions versus 1990.

Further, 64% of the people in EU are ready to switch from the car to public transport because of climate.

RAIL APPROVED

DIN EN 45545-2 HL3, DIN EN 50155



Trains are divided into four wiring levels:

- The Ethernet-Train-Backbone uses connectors with high transmission rates up to 10GBit/s according to Cat6A.
- The Ethernet-Consist-Network uses connectors with lower data rates up to 100MBits/s according to Cat5e.
- The third level consists of standard sensor-/actuator wiring for e.g. door systems.
- In the fourth level, power connectors are used to ensure the power supply.

ESCHA products with the **'rail approved'** seal consist of connectors and cables which are tested according standards like DIN EN 45545-2 (fire performance) and DIN EN 50155 (mechanical stresses, vibration, shock).

BUS APPROVED

Buses are divided into three wiring levels:

- The first wiring level is based on CANopen DeviceNet.
- The second level uses connectors with lower data rates up to 100MBits/s according to Cat5e.
- The third level consists of standard sensor-/actuator wiring for e.g. door systems.

ESCHA products with the 'bus approved' seal combines all products which are tested according ECE R118 (Fire performance cable)

Projects

- **Brake resistance**
  Brake resistance are necessary when large masses need to be decelerated quickly.

  ESCHA products: M12 connector

- **WaggonTracker**
  This platform combines monitoring and automation which is very efficient and cost-saving. It provides automated processes plus information about the vehicle fleet in real-time.

  ESCHA products: T-splitters, M12 connector, Receptacles

Projects

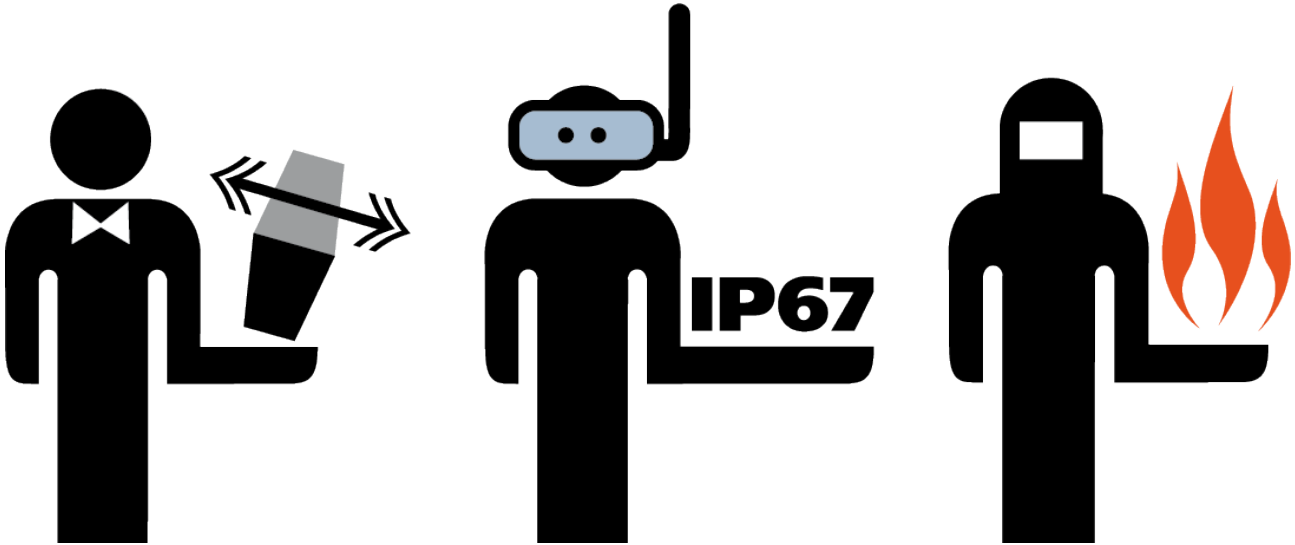
- **Passenger counting**
  This product is installed near the doors and is used for passenger counting. Public transport companies can receive valuable data. Based on current and updated passenger numbers, they can keep track of transport demand and can react flexibly.

  ESCHA products: Receptacles, M12 connector

- **Push buttons**
  M8 connector can be used for push buttons.

  ESCHA products: M8 connectors

Why ESCHA products?



Our products are rail and bus approved and fulfil the specific rules and standards like fire protection (cable and connector), robustness, reliability or IP-Protection class.

Valve connectors with rail approval

Applications

pneumatic and hydraulic control, vacuum up dirty water from the toilets, control of the sanding machine for a better tracking during rainy weather, optimize the braking performance, control of compressed air

Advantages

consistent quality in the connections between wire and contact, avoiding failures during assembling, tested according the rail standard

THANK YOU

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CHALLENGE US TO GROW YOUR BUSINESS!

ESCHA