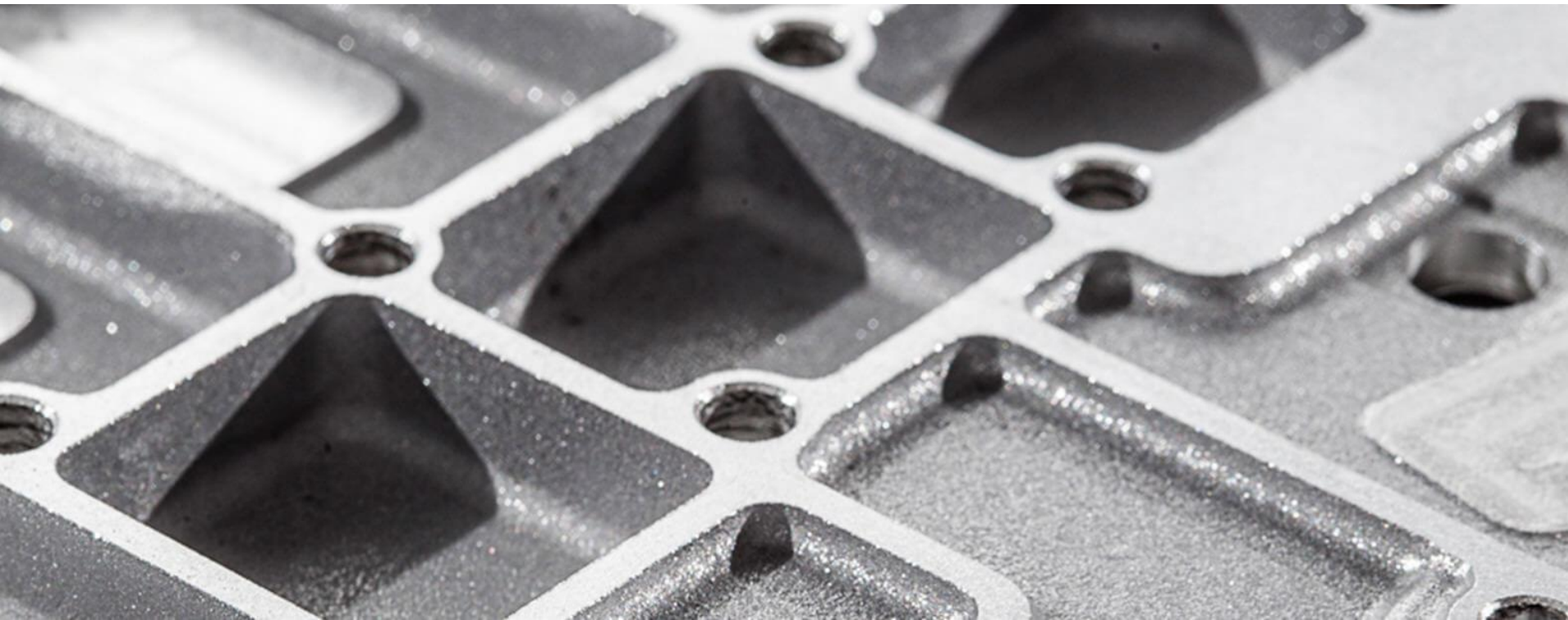




**Alteams**

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# Alteams Group Presentation

## Alteams Group at a Glance

- Cast aluminium solutions for advanced applications
- Volume production expertise dating from 1940's in Finland and Sweden
- Re-named **Alteams Group** in 2002
- Today – 4 casting methods in 5 production factories in China (2001), Finland (1943), Poland (2013) and India (2007)
- Local Customer support in Sweden and Japan
- Own tool design and manufacturing in China (2005)
- 2021 Sales Revenue was 97M€ (excl. India JV)
- We employ 1600 multinational professionals
- 100% privately owned by **Kuusakoski Group Oy**



Green Sand - Loppi



FSW - Laihia



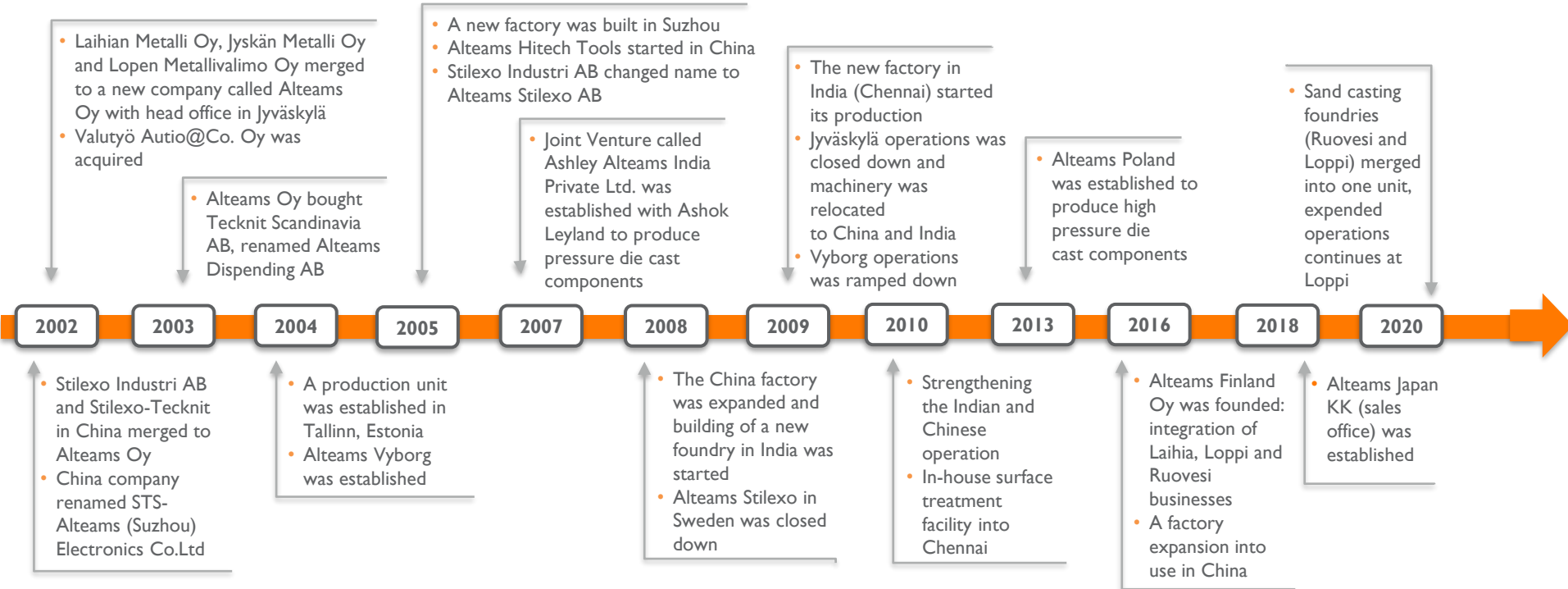
CNC - Poland

# Alteams Group – Milestones

- 2022:** Start die casting with 1800tn machine in Poland
- 2021:** Alteams Hitech Tools moved to new facility, next to foundry
- 2019:** Alteams Suzhou Industrial Technology Ltd was established
- 2018:** Friction stir welding (FSW) – a new technology in Alteams was launched in Finland
- 2016:** Alteams Japan K.K. founded.
- 2013:** Alteams Poland Sp. z o.o. founded
- 2007:** Ashley Alteams India Limited founded (JV with Ashok Leyland Ltd)
- 2005:** Alteams Hitech Tools founded
- 2004:** Alteams Eesti OÜ and Alteams Vyborg founded
- 2002:** Stilexo Industri AB (1979) and STS (Suzhou) Co., Ltd. (2001) acquired
- 2002:** Jyskän Metall Oy (1943), Laihian Metall Oy (1950) and Lopen Metallivalimo Oy (1955) merged into Alteams Oy

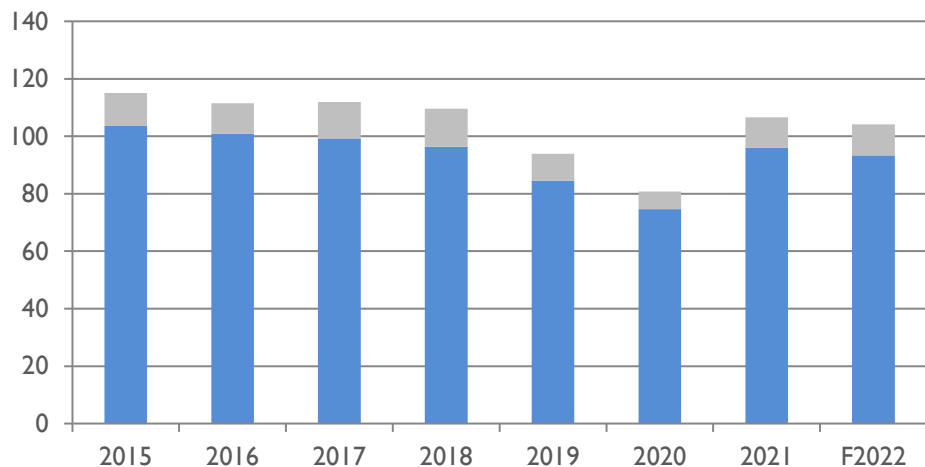


# The Story Behind the Success

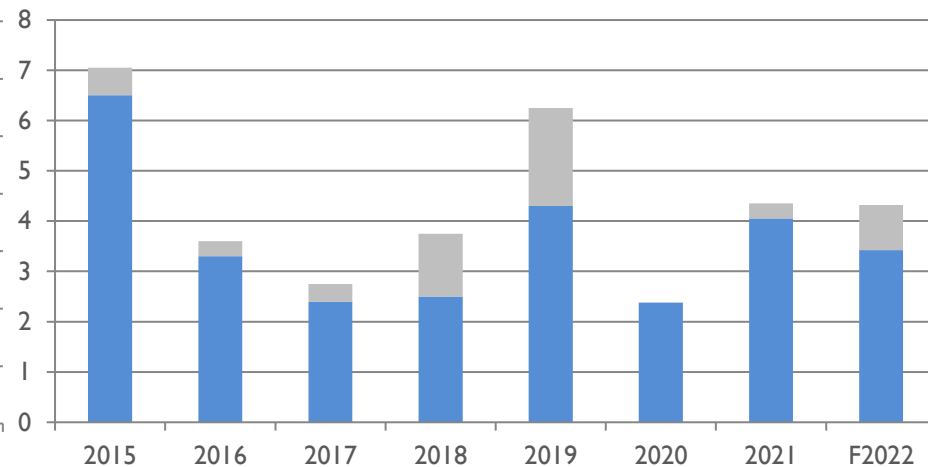


# Alteams Group in Figures

## Sales (MEur)

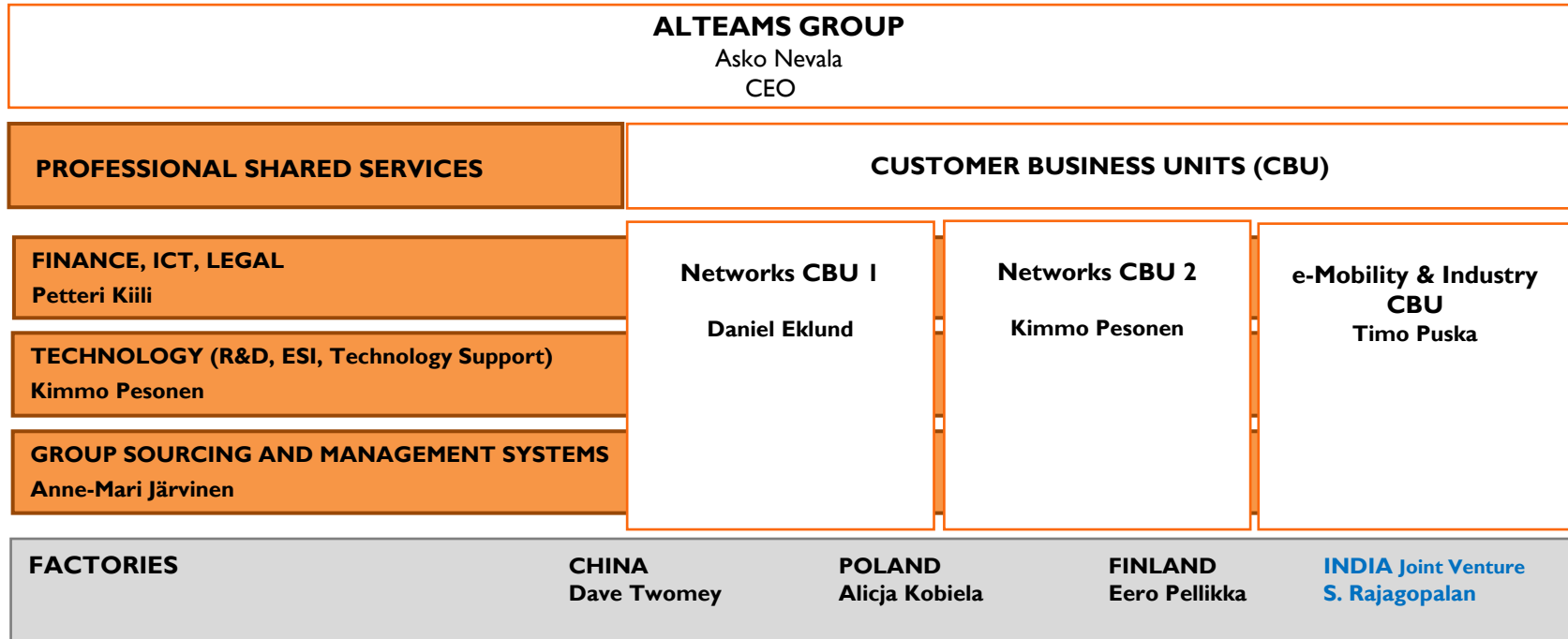


## Investments (MEur)



- Alteams Group without Ashley Alteams India
- Ashley Alteams India (Alteams Group's share 50% of the total joint venture turnover/investments)

## Alteams Group Organization 2022-06-01



Management Team: Asko Nevala, Daniel Eklund, Anne-Mari Järvinen, Petteri Kiili, Alicja Kobiela, Kimmo Pesonen, Timo Puska, Dave Twomey, Eero Pellikka

First choice partner for advanced cast aluminium solutions

## Competitive Advantages

- Technical know-how
- Product design for heat transfer
- Global engineering
- Global manufacturing

## Strategic Priorities

### Profitability

- Operational Excellence in
  - safety
  - quality
  - on time
  - cost

### Growth

- Diversify **Network** product portfolio
- Grow **selected industrial** applications
- Enhance existing **global presence**

## Strategic Intent

Leader in heat management solutions  
 Best in class in Time to Market  
 Competitive in Quality & Cost

## Objectives:

- Revenue > 100 MEUR
- Quality
  - \*CoPQ < 4%
- Efficiency
  - \*OEE > 75%
- Profitability
  - \*EBIT > 5%
- R&D generates incremental revenue
- Excellence in Customer satisfaction ranking

\*CoPQ = Cost of Poor Quality  
 \*OEE = Overall Equipment Effectiveness  
 \*EBIT = Earnings Before Interest & Tax



# Our Company Values



## People are our key to success

- Respect**  
Every Alteams Group employee will be treated with respect regardless of nationality, race or gender
- Give opportunity**  
We encourage and trust our people
- Knowledge**  
Sharing individual expertise is the basis for company success
- Encourage to contribute**  
All improvement ideas are welcome and valuable
- Investment in people**  
Training & development is key to better service and competence
- Equality**  
Diversity is our strength – learn from each other's approach

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## High quality attitude

- Respect for customer**  
Listening and understanding customer needs
- Be responsible & accountable**  
Everybody has clear assignments and is in charge of his/her own work's performance
- Pride in my work & ownership**  
I do my work well so you can also do your job well
- Positive quality attitude**  
Good product quality does not happen by accident
- Continuous improvement**  
Strive for better
- Good quality starts from good leadership**  
Lead by example

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## We keep what we promise

- Customer focus**  
Fulfill customer needs with value added solutions
- Internal Customer thinking**  
Each colleague is your internal customer
- Can-do attitude**  
We strive to meet all challenges
- Reliable**  
Right product, delivered on time and to the right place
- Commitment**  
We will deliver professional service to customers
- Transparency**  
We operate in a way that it is easy for others to see what actions are performed

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# Our Company Values

To demonstrate our commitment to our company Values and provide a supply chain benchmark for our customers – Alteams Group has registered under EcoVadis in 2018.

EcoVadis is the first and largest collaborative platform providing Supplier Sustainability Ratings for global supply chains. EcoVadis evaluates suppliers from four perspectives: environmental responsibility, working practices, operational ethics and a sustainable supply chain. More on website <http://ecovadis.com>

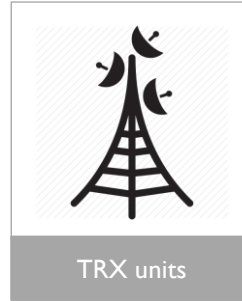
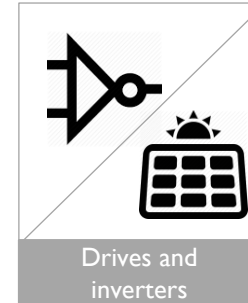
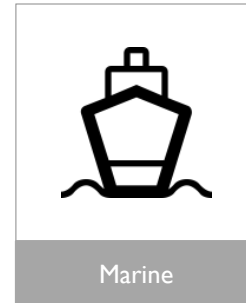
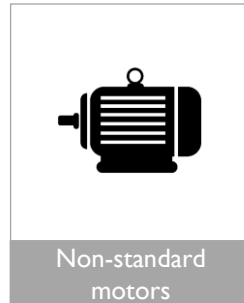
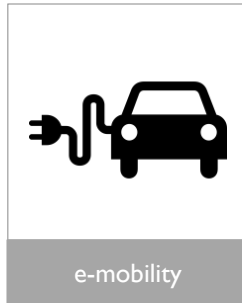
- In Aug 2021, EcoVadis rated Alteams to the Silver level.
- Alteams's score was 55/100, which is the highest result in the company's four-year history as a member of the EcoVadis network.



Overall score distribution



# Focus Segments and Applications



# Our Value Chain



# Our Global Footprint

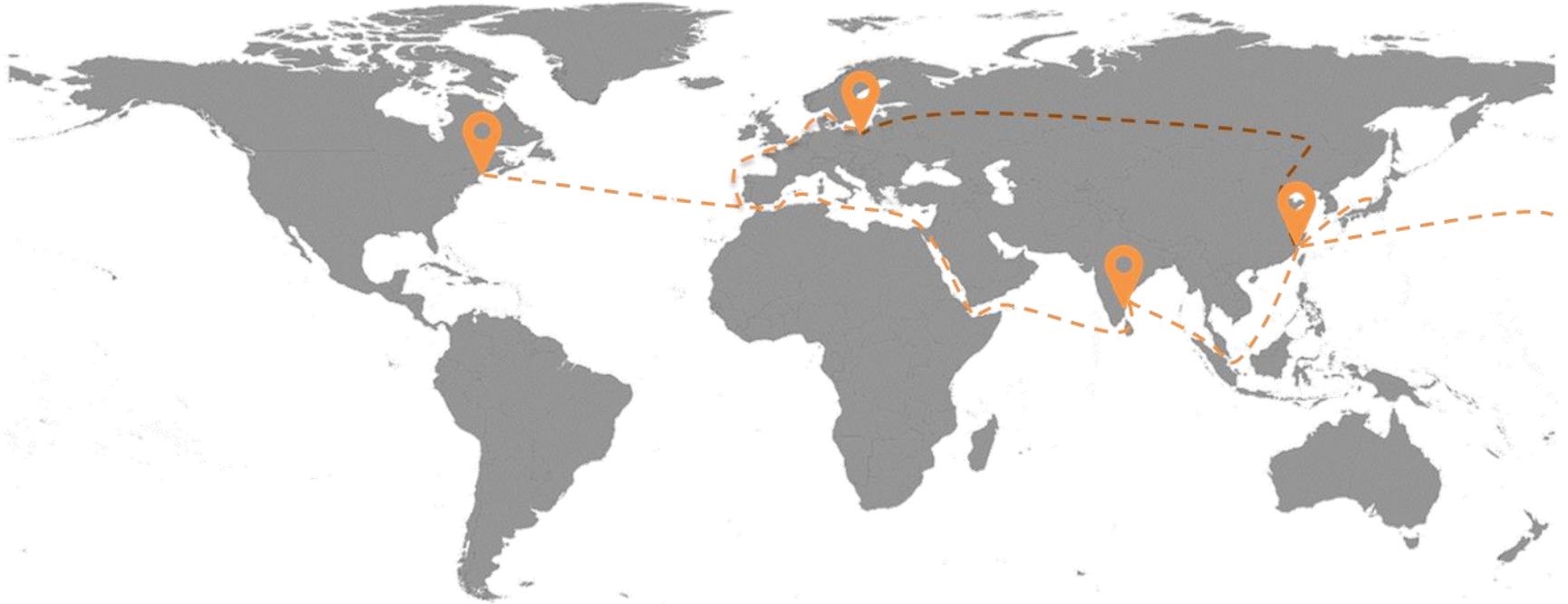


-  Head Office
-  Production Site
-  Sales & Support Office
-  Logistics Center

# Global Manufacturing Platform

<b>SUZHOU</b> China	<ul style="list-style-type: none"> <li>• High-pressure die-casting</li> </ul>	<ul style="list-style-type: none"> <li>• Machining, surface treatment, assembly</li> <li>• ISO 9001, ISO 14001 &amp; IATF 16949 certified</li> <li>• Extensive sub-contract process capabilities</li> </ul>
<b>SUZHOU AHT</b> China	<ul style="list-style-type: none"> <li>• Tool design and manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Captive tool manufacturing for all sites</li> <li>• Mould design, CAD/CAM, new and copy mold build, and major mould maintenance for the foundry</li> </ul>
<b>LEBORK</b> Poland	<ul style="list-style-type: none"> <li>• High-pressure die-casting</li> </ul>	<ul style="list-style-type: none"> <li>• Machining, FSW, impregnation, assembly</li> <li>• ISO 9001, ISO 14001 &amp; IATF 16949 certified</li> </ul>
<b>CHENNAI</b> India	<ul style="list-style-type: none"> <li>• High-pressure die-casting</li> <li>• Ni/Cu/Ag plating facility</li> </ul>	<ul style="list-style-type: none"> <li>• JV (50/50%) with Ashok Leyland</li> <li>• Machining, impregnation, surface treatment, assembly</li> <li>• ISO 9001, ISO 14000, IATF 16949 &amp; OHSAS 18001 certified</li> </ul>
<b>LAIHIA</b> Finland	<ul style="list-style-type: none"> <li>• High-pressure die-casting</li> <li>• Low-pressure die-casting</li> </ul>	<ul style="list-style-type: none"> <li>• Machining, FSW, impregnation, assembly</li> <li>• ISO 9001, ISO 14001 &amp; IATF 16949 certified</li> </ul>
<b>LOPPI</b> Finland	<ul style="list-style-type: none"> <li>• Sand casting</li> <li>• Shell mould casting</li> <li>• Low-pressure die-casting with shell cores</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise in pressure tight castings and prototyping</li> <li>• Specialized in low volumes and big parts</li> <li>• ISO 9001 certified</li> </ul>

# Supply Chain Solutions



## China – Suzhou Plant

- Casting process: high pressure die casting
- Medium to high volumes (20 000 – 250 000 shots/a)
- 1000 employees
- 20+ years large scale production experience
- IATF 16949, ISO 9001, ISO 14001 and SMETA certified
- Specialty:
  - Passivation and powder painting
  - HTC alloy castings
  - Strategic partnership with foundries with 2000-4000t HPDC machines





# China – Alteams Hitech Tools

## Brief overview

- Design & manufacturing of moulds
- More than 1700+ moulds made since 2005
- Motivated and experienced personnel (>60)
- Modern machinery with HS-milling
- 1,400 m<sup>2</sup> total area
- Capacity of >120 tools/year

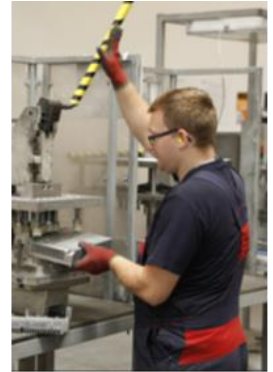
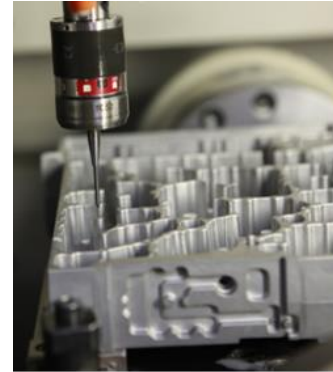
## Advantages

- In-house tool design – instant feedback from foundry
- Protecting customer design and IP rights
- Short and reliable lead-time
- Flexibility



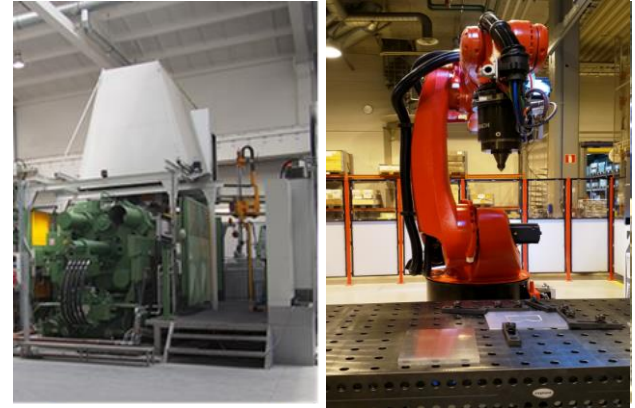
## Poland – Lebork Plant

- Greenfield factory since 2013
- Casting process: high pressure die casting
- 200 employees
- Medium volumes (20 000–100 000 shots/a)
- IATF 16949, ISO 9001 and ISO14001 certified
- Speciality:
  - Lean factory with modern machinery
  - Form in Place (FIP) gasket dispensing
  - Surface treatment by partners
  - Impregnation, Leak testing & Assembly
  - FSW
  - Clean zone with dedicated washing line



## Finland – Laihia Plant

- Casting processes: high pressure die casting and low pressure die casting
- 90+ employees
- IATF 16949, ISO 14001 & ISO 9001 certified
- Specialty:
  - Large and demanding low pressure die castings
  - Impregnation and leak testing
  - Heat treated castings (T5 & T6)
  - Friction Stir Welding (FSW)
  - Assembly



## Finland – Loppi Plant

- Casting processes: sand and shell moulding, low pressure die casting with shell cores
- 60 employees
- Manual and semi-automated casting lines from one to thousands pieces / batch
- ISO 9001 & ISO 14001 certified
- Specialty:
  - Prototyping
  - Pressure tight castings (SF6) with complex cores
  - Parts with integrated liquid cooling
  - Up to 600 kg casting weight

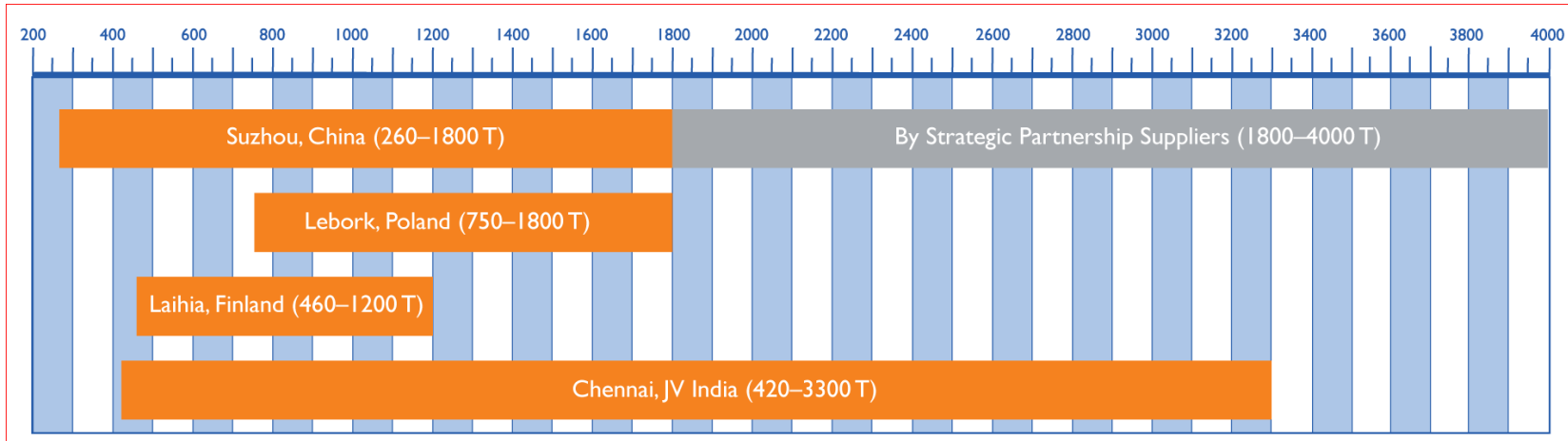


## India – Chennai Plant

- JV with Ashok Leyland (50/50)
- High pressure die casting up to 3300 tn
- IATF 16949, ISO 14001, ISO 9001 and OHSAS 18001 certified
- Specialty:
  - Technology lead by Alteams Group
  - Comprehensive range of processes
  - In-house metallic plating & passivation
  - Form in Place (FIP) gasket dispensing
  - Complex vehicle castings



# High Pressure Die Casting Machines (locking forces)



# Reference Applications – e-Mobility and Industry



**Minibus vehicle seat fixing system**  
Low pressure die casting



**Diesel engine components**  
Low pressure die casting



**Chassis for frequency converters**  
High pressure die casting



**Rear Cover for HMI/IPC**  
High pressure die casting



**Housing for EV inverter**  
HPDC, FSW, critical cleanliness



**HMI frame and rear cover**  
7, 9, 12, 15, 18, 22, 24 & 27 inch, Powder Coating

# Reference Applications – e-Mobility and Industry



**Chassis for frequency converter**  
High pressure die casting



**Electrical motor parts**  
High pressure die casting



**Housing of HV inverter for EV**  
High pressure Die casting, FSW,  
critical tightness & cleanliness



**Manifold, Air Intake**  
Sand casting



**Cover, Aftercooler**  
Sand casting



**Tube, Air Intake**  
Sand casting



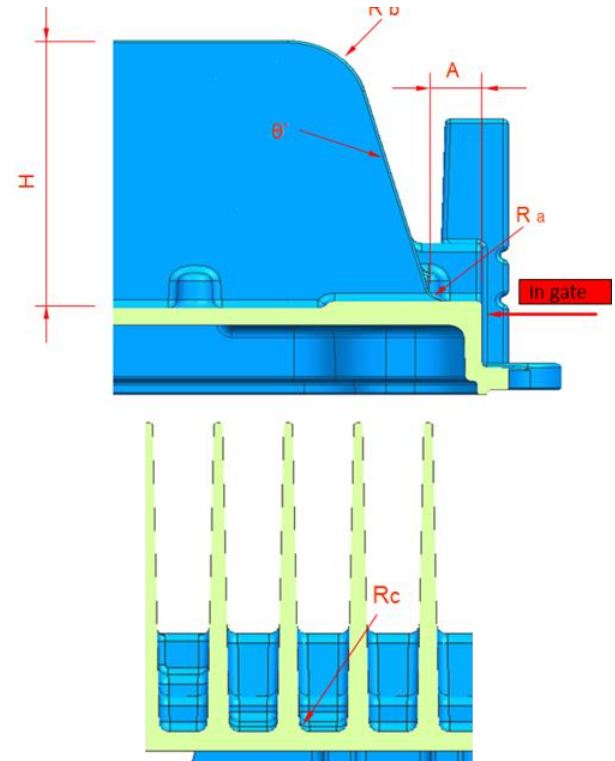
# Reference Applications – Communication Networks



# HPDC Design & Process Expertise

To solve your heat transfer, EMI shielding, IP sealing, weight reduction, structural and material challenges

- Engineering resources to perform ESI, DFM analysis and casting model optimization
  - Cast design for connectors, IP sealing and FIP shielding
  - Cooling fins with nominal heights from 10 to 100mm (contingent on pitch and metal feed path)
- Aluminium alloys for excellent corrosion resistance, heat transfer, strength and castibility:
  - AlSi10Mg (360), AlSi9Cu3 (380), and AlSi12Fe (413)
  - Heat treatable (custom) low-Si alloys to achieve 175W/mK



# HPDC Design & Process Expertise

To solve your advanced product design challenges:

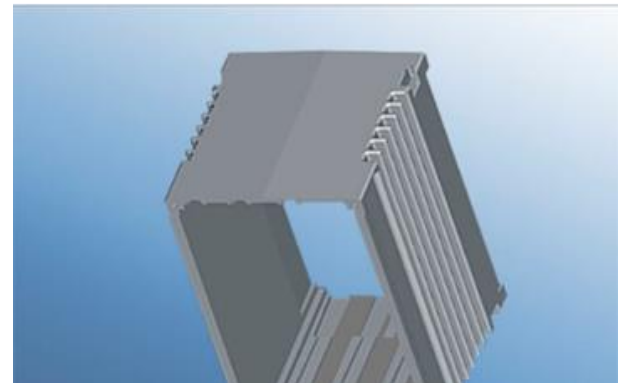
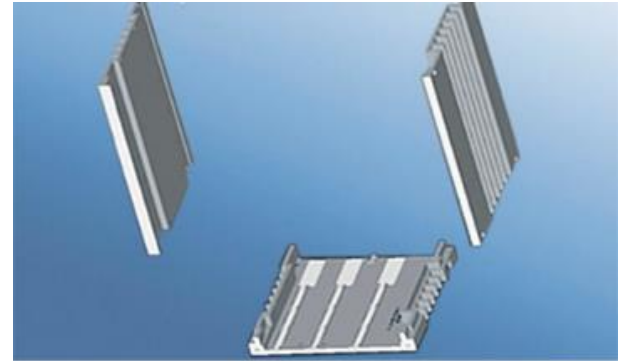
- Friction Stir Welded (FSW) assemblies of cast, plate or extruded aluminium materials
  - Internal liquid cooling channels
  - Innovative and Net shapes
- Integration of embedded Heat Pipes for directional cooling



# Development Case

## One Example in Your Case – early involvement in R&D phase

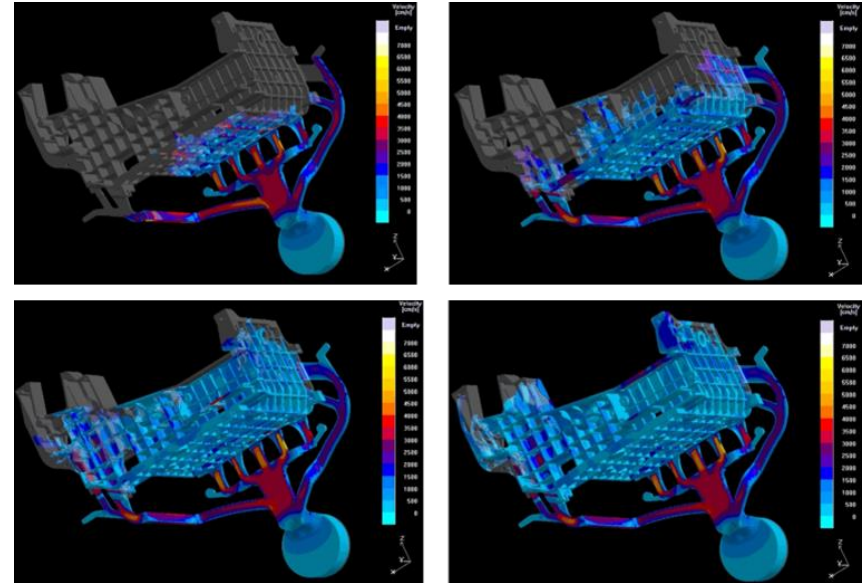
- R&D team in Germany – supported by Alteams Engineering Sweden & Finland
- Redesigned 4 parts → 1 complex housing
- Improved quality and tightness (IP class) - no assembly
- Optimized cast part design
- Saved 20% in direct costs
- Manufacturing in China – delivery to Germany
- Today next generation under massproduction in China



# Shorter Ramp-up Time

## Casting simulations

- Design analysis for good cast ability
- Optimization of gating, feeding and solidification to ensure optimal tooling design
- Implementation of customer requirements to product properties
- Shortening the ramp-up time for mass production



# Prototyping

## Different needs

- Design Concepts
- Early samples (verify the concept)
- Pilot/pre series
- Low volume

## Different processes

- Sand casting
- Shell moulding
- Soft tool
- 3-D Rapid tooling
- Plaster mold casting
- Investment casting
- Hog Outs from aluminium block



Sand cast prototype  
– few pieces to pre-series of hundreds delivered



High pressure die cast part in mass production

# Value Added Processes

## Machining

- Combined, over 150 CNC spindles (Mazak, Brother, Mori Seiki)

**Friction stir welding** (Laihia, Finland and Lebork, Poland)

## Secondary processes

- Straightening, impregnation, leak testing, heat treatment

## Surface treatment

- ROHS-compliant passivation
- Metallic plating
- Powder coating
- CED (Cathodic Electro Deposition) by partners

## Dispensing

- Form in Place (FIP) gasket dispensing for EMC shielding
- IP sealing

## Sub-assembly

- Heat pads, heat pipes
- Mechanical parts





**Alteams**

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