

HA Center of Competence

- ▶ Accelerate Innovation
- ▶ Optimise Foundry Processes
- ▶ Design Conception and Prototyping
- ▶ Training Courses and Conferences





The CoC facilitates cooperation and allows us to bring solutions to market quickly and effectively.

As a producer of foundry chemicals, we are the link between foundries, with their casting requirements, and machine manufacturers, with their technical possibilities. In the past, customers often started by creating a new production line design for their new product in close collaboration with the machine manufacturer. Only once the new plant was ready did the foundry approach HA to find the right chemical products to produce the casting. This was often too late to provide customers with solutions tailored to their processes or castings, which then still had to be put into commission. As a result, valuable time was lost.

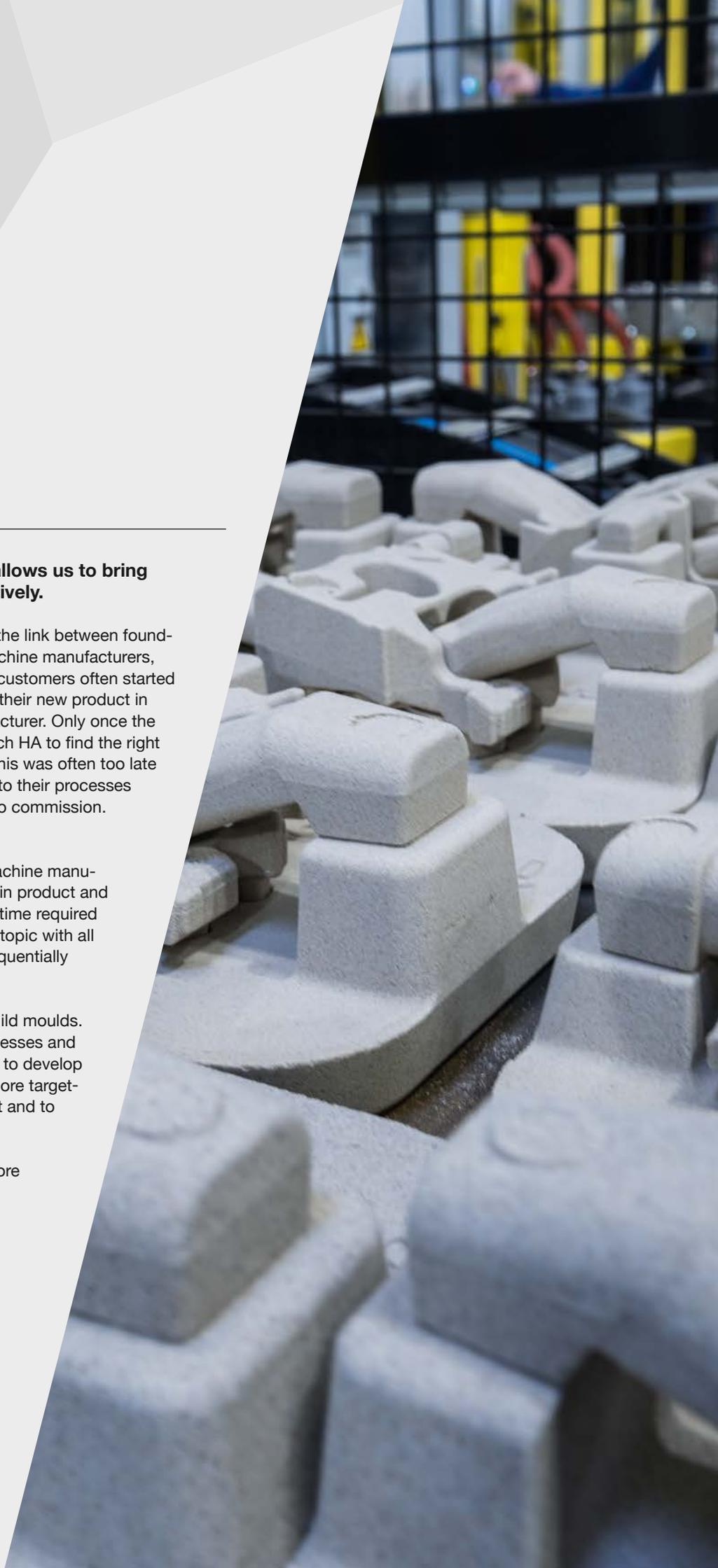
By working together with the foundry, the machine manufacturer and other partners at an early stage in product and process development, we aim to reduce the time required for this phase. In our CoC we can work on a topic with all parties involved at the same time and not sequentially as before.

In our CoC, we can cast, shoot cores and build moulds. We can also fully test and optimise new processes and products before they are used. This helps us to develop products for our customers faster and in a more targeted manner until they are ready for the market and to successfully launch them in foundries.

What can we do for you? Contact us to explore the possibilities.

Your
Amine Serghini

*Member of the Executive Board and
responsible for Global Sales
and Marketing*





Why have we installed a „Center of Competence“?

HA's path to innovative, customer-focused solutions is the result of ...

- ▶ powerful research and development
- ▶ practical testing and technological cooperation with our customers and partners (e.g. machine manufacturers)

How do we go from an idea to market-ready innovation?

On their own, good ideas and new developments from the laboratory are of no use to foundries. Benefits – and thus success – only emerge when these innovations serve the actual needs of our customers and can also be optimally used under industrial conditions with the appropriate machines and systems.

We want to be faster and more targeted in bringing products to market, which can then be used immediately in production by our customers.

The HA Center of Competence allows us to do just this.

This is where ...

- ▶ a cooperative partnership takes place between our company, our customers and machine manufacturers;
- ▶ new developments from our laboratory are extensively tested before they are implemented.

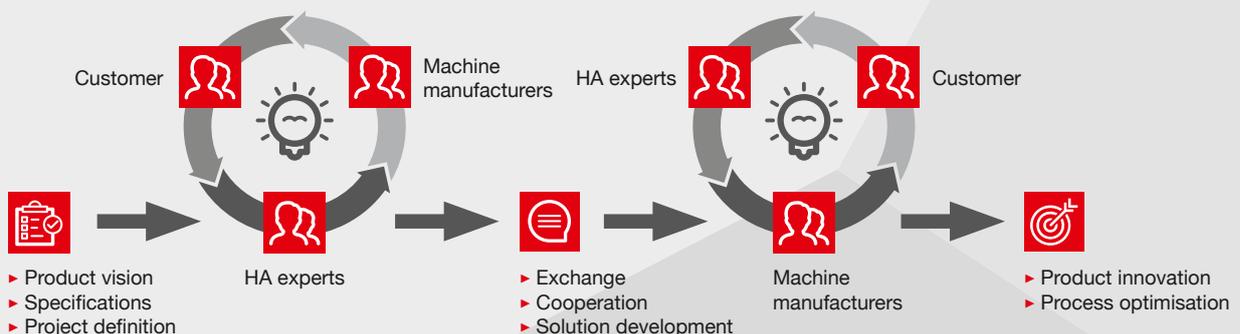
Our aim is to help our customers with foundry chemical product innovations ...

- ▶ to optimise processes,
- ▶ to improve efficiency,
- ▶ to increase environmental sustainability.



How does it work?

We involve customers and machine manufacturers from the outset: HA's product visions, customer specifications, requirements for machine technology are discussed and projects defined. In the course of developing solutions, we are constantly in close contact with our customers and partners.





Your partner for development and service

The HA Center of Competence (CoC) has about 8,000 sqm of pilot and industrial facilities and replicates almost all of the stages of the foundry process.

Practical testing

New ideas and solutions for nearly all mould and core production processes can be tested in practice, and without disrupting the processes of the customers.

Interaction of foundry chemistry and machine technology

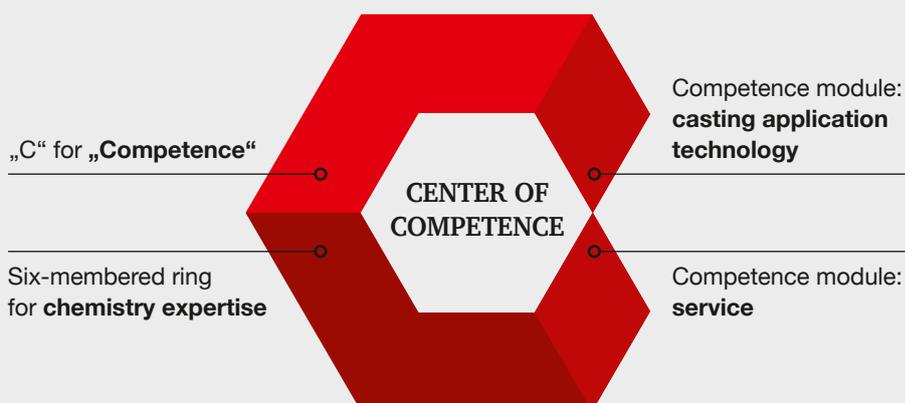
A comprehensive machine park offers the opportunity to optimise the interaction of foundry chemistry and machine technology. To this end, HA cooperates with virtually all renowned manufacturers of foundry plants.

External service provider

Our customers can carry out all of their prototyping in our CoC. We have everything we need to produce cores and moulds, and to cast all metals. This means that we are not only able to carry out prototyping from core production to casting, but also to provide other services that can then be outsourced by the foundry. We want to act as an extension of the foundry and offer everything that a foundry, in the midst of series production, would have difficulty implementing internally.



Our brand promise



Service modules

Foundry Technology Center

- ▶ Examine and optimise the process chain
- ▶ Test new products and product refinements
- ▶ Promote future technologies

Optimising Processes

- ▶ Close cooperation with industry partners
- ▶ Optimise the interplay between foundry chemistry and equipment

Projekt Work

- ▶ For customers during the project phase
- ▶ Design of cores and tools
- ▶ Qualification of new tools, cores and castings

Training

- ▶ For customers worldwide
- ▶ For employees in Germany
- ▶ For international employees

Pilot foundry plant

Potential daily production output:

Casting

- ▶ max. 2 tons (Ferrous and Non-Ferrous-Alloys)

Core production

- ▶ approx. 600 per day

Installation of core packages

- ▶ 20 core packages
(up to 19 cores per core package)

Core package coating

- ▶ 20 per day (by hand or with robots)

Drying

- ▶ 40 core packages per day

Moulding plant

- ▶ 40 moulding boxes per day,
max. 150 kg grey cast iron per moulding box

Moulding plant

- ▶ 40 moulding boxes per day,
max. 300 kg aluminium per moulding box

Post-casting treatment

- ▶ max. 40 castings per day



Project work



Design conception

- ▶ For cores or/and casting
- ▶ For production process



Tool design / commissioning of tools

Together with selected partners the CoC finalises the concept, the production and the commissioning of tools for both IOB and organic processes



Robotics / grabber concepts

The pre-teaching of robots including the design and production of appropriate gripper in cooperation with selected partners



Feasibility study

The design and concept for a new production line or modification of an existing line dedicated to specific parts

Pilot foundry plant



The machine park's facilities include:

- ▶ melting and casting plants
- ▶ core shooting machines for Cold-Box, inorganics and other core production processes
- ▶ sand mixing plants for Cold-Box and inorganic processes
- ▶ continuous mixers for the no-bake process
- ▶ coating area, including robotic handling
- ▶ drying oven with a range of special features
- ▶ extensive measuring technology

Further technologies in the second expansion stage:

- ▶ Moulding line
- ▶ Pressure die casting
- ▶ Low pressure die casting
- ▶ Automatic coating preparation
- ▶ Thermal/mechanical sand reclamation
- ▶ 3D printer

Major innovation topics

Cold-Box

Environmentally compatible production and increased part complexity are two challenges that foundries are facing today. We are developing new generations of Cold-Box binder systems that manage this balancing act: fewer emissions and uncompromising performance.

Inorganics

Inorganic binder systems may have outgrown their infancy and are now delivering efficient, high-quality results, but their development is far from over. Our foundry specialists and chemists are working hard to further improve these products. The company is working on a variety of challenges, including optimising storage stability and using inorganics in iron casting.

Coatings

We are pursuing a number of different objectives and advances in the area of coatings. Firstly, we aim to ensure that binder systems and coating materials harmonise as well as possible in order to prevent certain defects in iron and steel castings. Other development topics include water-based coatings for inorganically bound cores and coatings for 3D printed cores.



Training courses and conferences

The CoC's comprehensive service concept also includes the ability to hold training courses and conferences.

Alongside the foundry pilot plant, where all aspects of moulding and casting can be carried out in practice and experienced first-hand, our modern administration and training building offers well-equipped seminar rooms for up to 70 participants.

Training courses and conferences at the CoC can be combined in an attractive way, for example, with an eventful stay in nearby Goslar, the thousand-year-old imperial city at the foot of the Harz mountains. The stunning, old town, with its picturesque alleys, is listed as a UNESCO World Cultural Heritage Site and delights guests from home and abroad.



Training courses in theory and practice

Your contact for training courses and conferences in the CoC:

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HA Center of Competence

One of six HA locations in Germany

- ① **Düsseldorf**
Head office of Hüttenes-Albertus
Chemische Werke GmbH
- ② **Hannover**
Administration, binder and coating
production, centre for global
research and development
- ③ **Delligsen**
Chemex GmbH, production of
feeders and feeder additives
- ④ **Baddeckenstedt**
HA Center of Competence,
pilot foundry plant and
service
- ⑤ **Braunschweig**
Sand coating,
sand reclamation
- ⑥ **Duisburg**
HA Minerals GmbH,
production of bentonite
and lustrous carbon formers



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