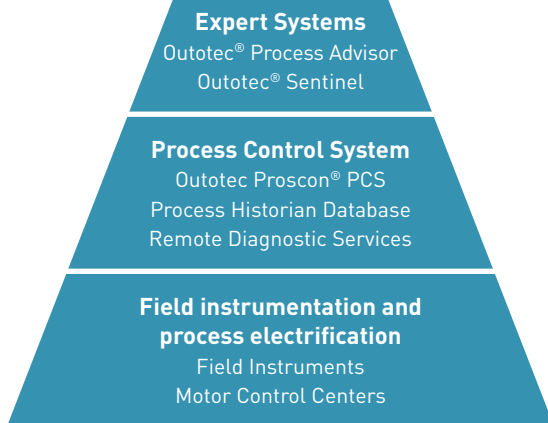


# Outotec® Process Advisor and Outotec® Sentinel

Expert systems for easy-to-use process control and monitoring softwares

Outotec has long experience from Flash Furnace process control. In the recent years emphasis has been put on developing easy-to-use process control and monitoring softwares, so called Expert Systems. The Outotec® Sentinel system is an online furnace integrity monitoring system for cooling elements, and the Outotec® Process Advisor is an online dynamic process control model with an operator user interface. These softwares can be integrated with the Outotec Proscon® automation system and together they form a complete process automation platform for a smelter operation.

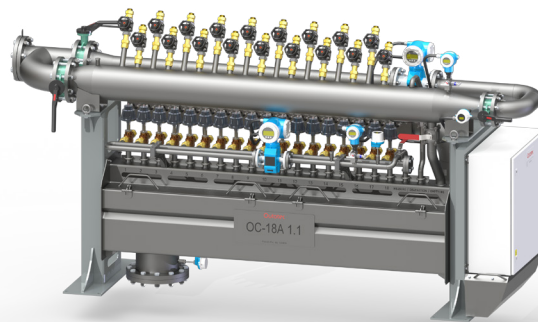
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Santiago, Chile



*Outotec's scope of automation*

#### Quick facts:

- High quality Outotec cooling elements together with the Outotec Sentinel cooling water supply and monitoring system compose an extensive cooling solution.
- New Outotec expert systems can result in significant improvements in process monitoring and control. Equipment integrity and personnel safety will be ensured with constant monitoring and alarm indications of the expert systems. The Outotec solution combines all of these forming a complete package.
- Direct economic benefits can be achieved by stabilizing the process conditions, which enables lower metal losses, higher oxygen efficiency, lower energy costs and optimized shut-down scheduling for equipment replacement (improved furnace lifetime).



Outotec provides leading technologies and services for the sustainable use of Earth's natural resources. As the global leader in minerals and metals processing technology, Outotec has developed many breakthrough technologies over the decades. The company also provides innovative solutions for industrial water treatment, the utilization of alternative energy sources and the chemical industry. Outotec shares are listed on NASDAQ OMX Helsinki.

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