

READY TO EXCEED.



TMT TAPPING
MEASURING
TECHNOLOGY

TapManTM

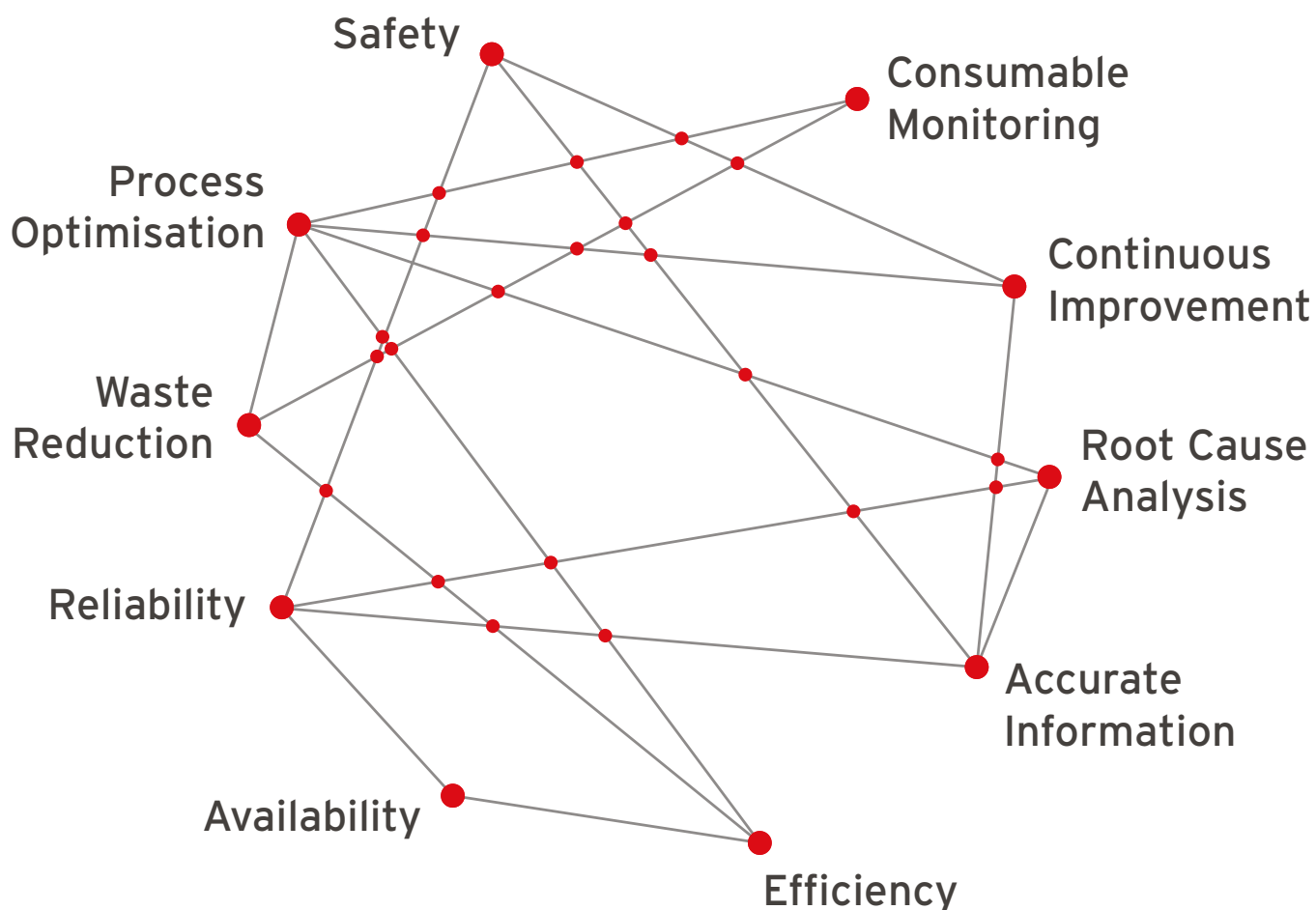
tmt.com

FACE THE CHALLENGE

TapMan™ supports furnace and smelter operators in handling frequently changing tapping conditions

Final product requirements, raw material costs or quality, market demands or environmental regulations lead Blast Furnace operation managers to take challenging decisions day by day ensuring equipment efficiency, durability and availability.

TapMan™ is the choice of today's cast house operators, having continuous access to informative dashboards, smart notifications and alarms. This drives effective response to changing conditions in the cast house and supports the objectives of stable process operation while ensuring maximum availability of your tapping machines.



SAFETY FIRST!

Monitoring tapping equipment functionality with safety in-mind

TapMan™ continuously monitors critical equipment functionality and notifies users about deteriorating operating conditions.

Tracking of equipment operation data like clay gun slewing pressure draw conclusions about movements

and forces on the ramming unit throughout the plugging process. This prompt operational feedback is essential for safe and successful closing of the tap hole. Power reserve monitoring with TapMan™ furthermore enhances reliable operation during tapping, ensuring equipment is available when needed.



		2021-09-21T14:22:10	Claygun 2 SlewingPressure low	405	
		2021-07-30T18:29:40	Claygun 2 SlewingPressure low	213	
		2021-07-30T13:03:13	Claymass volume at taphole 1 deviates > 10l	212	



/ YOUR BENEFITS

Safety hazard alarms

Reports critical operating issues, allowing responsible personnel to react in time and avoid process disturbance or damage.

Alarm origin identification

One click on a TapMan™ notification leads the user to a dashboard showing alarm origin and its relevant context.

Available power reserve

Notification if available equipment power reserve falls below a minimum value, costly process interruptions can thus be avoided.

TAPPING PROCESS OPTIMISATION

Valuable process feedback from TapMan™

Equipment data acquisition and monitoring is the key element for visualizing tap hole drilling and tapping process efficiency.

Communication with furnace control system (level 2) allows cross referencing monitored tap hole length and injected clay volume. Data can be displayed based on either time stamp or cast number.

Monitored tap hole length trends in relation to injected clay volume provide valuable insight on the effectiveness of plugging operations.

TapMan™ also records precise time stamps for “tap hole open” and “tap hole closed” events.

/ TapMan's™ process overview dashboard provides information about essential tapping results at a glance.



/ YOUR BENEFITS

Process transparency

Topic-centric dashboards provide a direct overview of tapping process stages.

Precise tap hole monitoring

Tap hole length is determined by advanced computational algorithms based on TMT know how.

Optional customising

Extend your knowledge base by integrating additional data. We will help with this on request!

WATCH YOUR CONSUMABLES

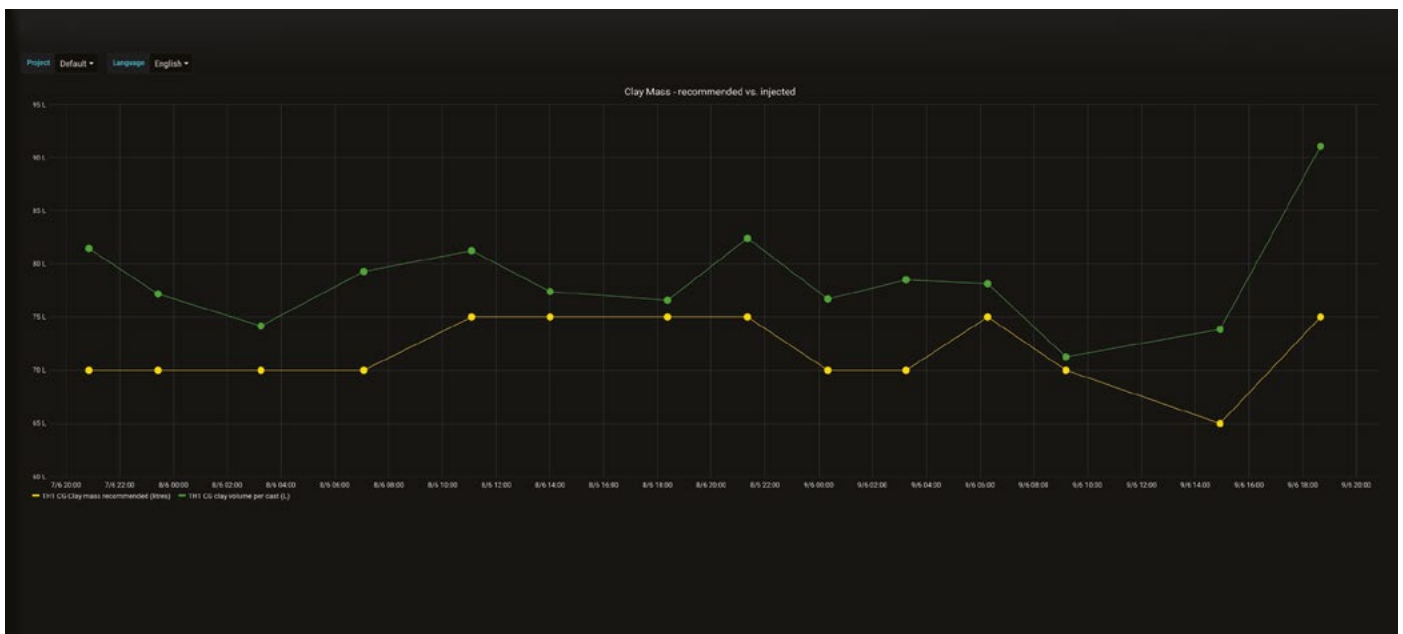
Saving on material consumption without compromising the tapping process

You want to change your drill bit type but you do not know what consequences this will have on your tapping process...

TapMan™ provides complete feedback on drilling operations. Performance of a drill bit type can easily be determined by monitoring drilling time for a given tap hole length. Benchmarking of drilling operations at individual tap holes is a TapMan™ feature that will help optimise overall performance on your cast house floor.

Managing clay costs begins with monitoring usage. TapMan™ monitors injected clay volume to target values and notifies excessive or insufficient material application to the persons in charge.

/ Monitoring clay usage: recommended vs. injected clay volume.



/ YOUR BENEFITS

Drill bit performance monitoring

Quick determination of the drill bit performance, facilitating the operators to reduce drilling time and/or consumables costs.

Clay performance benchmarking

TapMan™ makes clay performance benchmarking easier by indicating the clay supplier or type.

Control of efficient consumable usage

Analysis and reporting of clay consumption and targets, indicating potential for further cost savings.

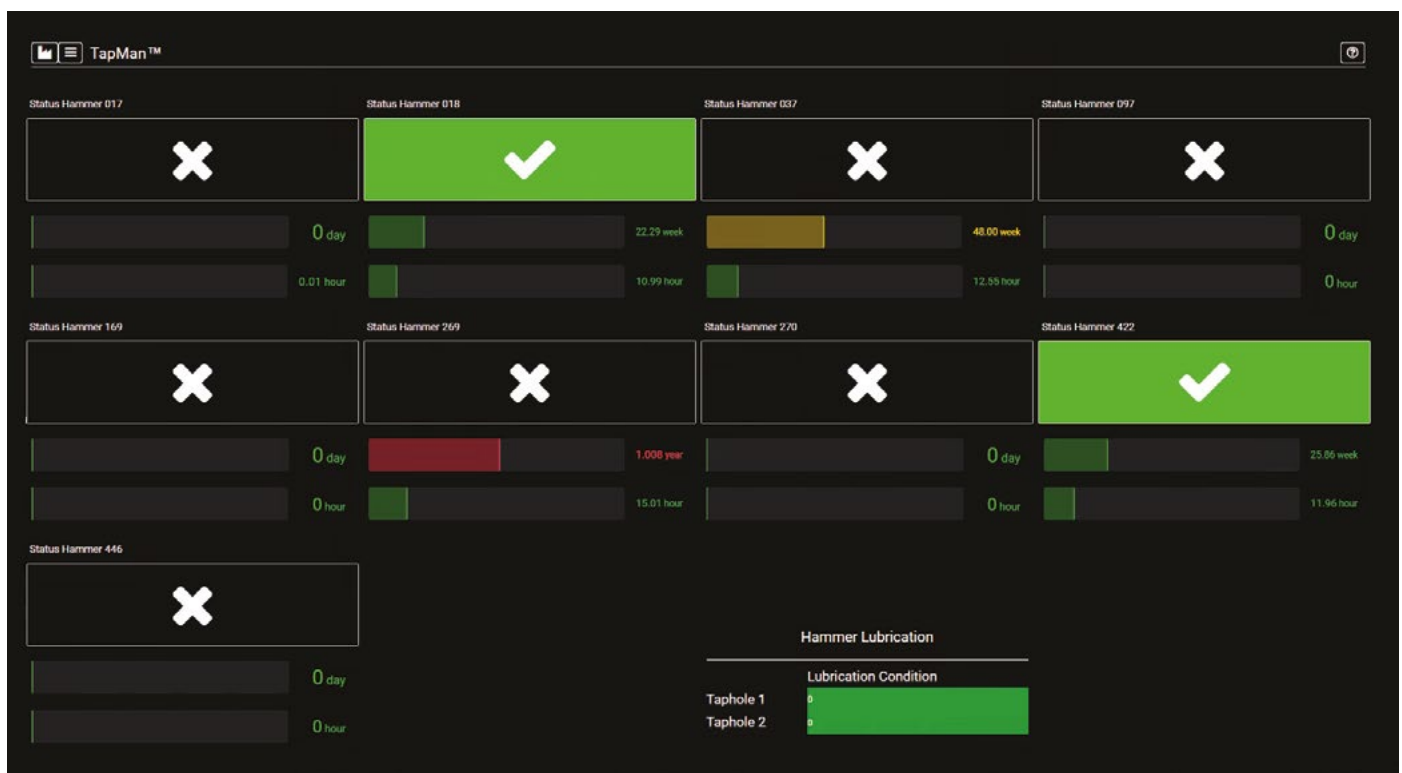
TAPPING MACHINE LIFE

Maximise tapping equipment life with knowledge-based condition and usage monitoring

TapMan™ actively monitors hammering operation and warns of inappropriate use. This contributes to maximise hammer lifetime and ensures highest availability. Consequently, wear and maintenance costs are reduced and operation time logging leads to accurate scheduling of hammer unit refurbishment.

In addition to the hammer maintenance module, TapMan™ also monitors the operation of hydraulic components such as the main pumps.

TapMan™ provides predictive maintenance features through integrated analysis of your assets.



/ YOUR BENEFITS

Minimization of idle hammering time

Excessive idle hammering is immediately reported to avoid excessive wear and to reduce maintenance costs.

Predictive maintenance features

Early warning of operational degradation allows maintenance in time, enhancing equipment availability and contributing to a stable furnace process.

Hammer maintenance management

This module provides a valuable overview of the condition of all hammer units within the plant.

TROUBLESHOOTING TOOL

TapMan™ helps you get to the root of your tapping problems

Knowledge is the foundation of all forward-looking predictive features in TapMan™. Gain new perspective using historical views of equipment operation and process data. Powerful data exploration in TapMan™ supports root-cause analysis of tapping issues. With newly gained understanding, monitoring rules are quickly developed and put to work in support of continuous improvement efforts.

On request, TMT can provide remote in-depth analysis of equipment and process behaviour. With our expertise, we can help to identify complex issues, root causes, and provide suggestions for improvement or potential solutions. Most importantly, provision of remote assistance is available on short notice, eliminating travel time and costs, with consciousness of environmental impact.



/ YOUR BENEFITS

Historical data available

Historical equipment and process data are important to understand current issues and to reveal efficient countermeasures.

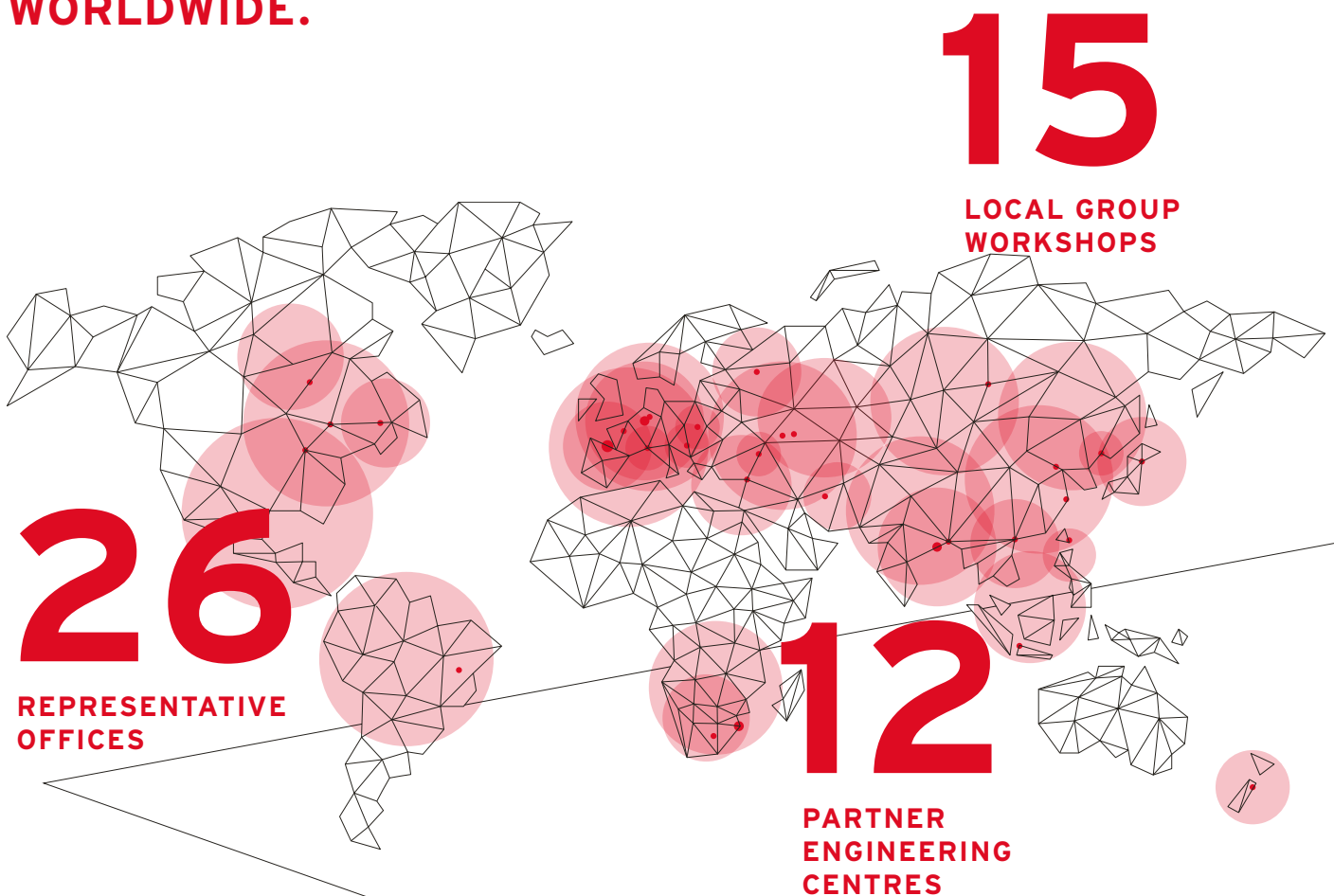
Remote TMT assistance

TapMan™ enables TMT to provide comprehensive remote assistance to even better support customers.

TMT support at short notice

Remote availability of multiple data enables TMT specialists to deal faster with issues the operators face or questions they have.

**NO MATTER WHERE,
SUPPORT IS JUST
AROUND THE CORNER.
WORLDWIDE.**



Maximum equipment availability

With TMT you have local support around the world. OEM subsidiaries and workshops spread around the globe are ready to assist you throughout the lifetime of the equipment.

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/ SERVICES

- ▶ Comprehensive refurbishments to extend the lifetime of your equipment
- ▶ Tailor made technology upgrades to boost the performance of existing equipment and to increase the safety level
- ▶ Site surveys and preventive maintenance to ensure availability of the equipment
- ▶ Supply of OEM spare parts and consumables to ensure reliable performance