

# Remote Tuning

Fast tuning of combustion systems for improved turbine availability, reliability and performance



## What it is

Dry Low NO<sub>x</sub> (DLN), K-ONE variable geometry systems and Dry Low Emissions (DLE) multi-burner combustion systems are designed to reduce the emissions of atmospheric pollutants from gas turbines. They use premixed flame technology and require periodic tuning to account for changes in ambient and fuel conditions as well as normal component wear (since the premixed flame's stability range is narrower than a standard diffusion flame).

Traditional tuning methods involve on-site field engineers and special temporary instrumentation. This includes time and labor-intensive practices with many days devoted to travel and tool shipment instead of actual tuning activities. Alternatively, GE's method can remotely tune all three types of systems with our unique combination of standardized on-site instrumentation and remote expertise. This makes tuning substantially easier and faster (taking hours rather than days), significantly improving turbine availability and reliability.

## How it works

GE's Remote Tuning Service reduces the time required for tuning and minimizes the need for personnel at the site. Specialized hardware is installed at the customer's site to collect and transmit data from the turbine control, HMI and remote tuning systems (REMS or CEMS) via satellite to the remote tuning stations at GE's iCenter in Florence, Italy.

## Tuning System

**Communication System:** the communications system runs through the customer's high speed internet connection and interfaces with their MK V or MK VI HMI – ideally with continuous emissions data availability. Dedicated software resides on the customer's HMI, while other advanced GE proprietary applications reside at the iCenter.

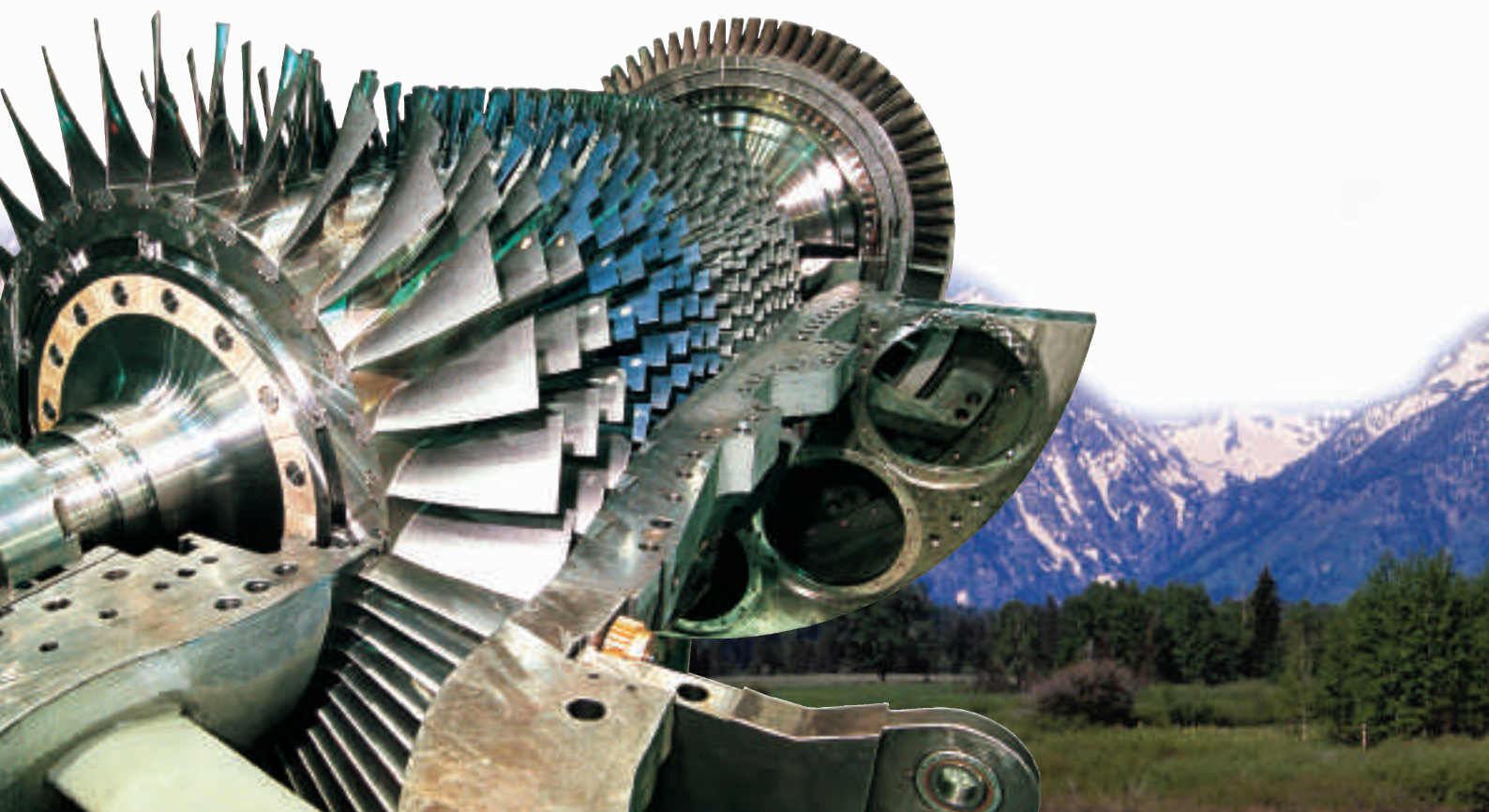
This dedicated hardware and software solution protects the process from communication interruptions and enables our tuning experts remotely access the unit's HMI for the combustion tuning and control.

**REMS Kit:** a portable emissions analyzer equipped with a permanent emission probe and transmission system. REMS will be used only during tuning activity and can serve more than one unit.

**Connectivity Kit:** the Connectivity Kit is the system designed to connect the site network to the outside world.

In addition a Lock-Box guarantees manual security control of communication between the HMI and iCenter. Each lock-box is equipped with a firewall configured to allow secure connection between the HMI and the Florence iCenter.

# iCenter remote tuning for lower emissions reliable operation



## Special features

### Real-time coordination

Communicating with a built-in chat interface, GE's tuning specialist and the customer's site technician share duties to complete tuning procedures, constantly and easily monitoring progress and modifying combustion parameters accordingly.

### System activation

Even though the system is always ready and able to transmit data, only the customer's authorized operators can initiate the information flow by means of a physical access key.

## Benefits

- GE's remote emissions tuning reduces typical service execution time by 50%
- Eliminates the need of on site tuning engineers
- Allows for fast tuning which delivers improved performance and operational flexibility
- Can be integrated with RM&D Services
- Ensures that remote services are provided by certified GE tuning engineers



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GE imagination at work