



Introducing



The Synchronization Experts.

Founded in 1979

- HQ in Bad Pyrmont, Northern Germany
- Entirely Focused on Synchronization
- Global NTP & PTP Technology Leader
- Consistent Track Record of Growth



**Entirely Focused on
Synchronization**

Since 1979

**Meinberg HQ
Bad Pyrmont,
Germany
Est. 1979**



**Oregano Systems,
a Meinberg Company
Vienna,
Austria
Est. 2001**



**Meinberg USA
Santa Rosa, CA,
USA
Est. 2020**



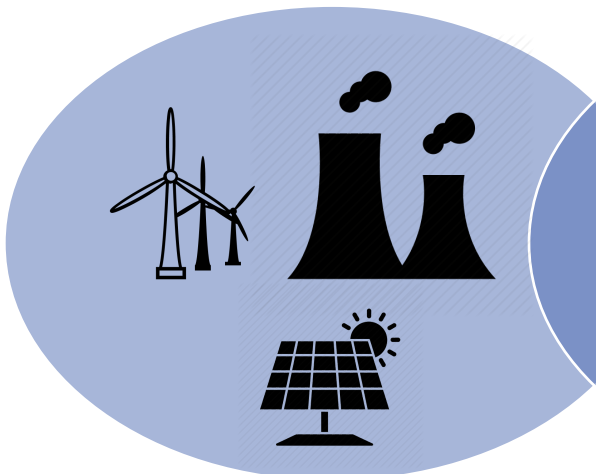


POWER GRID

- Frequency Deviation Monitoring
- Substation Automation
- SCADA System: IEDs, MUs, PMUs
- Synchrophasor Measurements
- Travelling-wave Fault Detection
- Anti-Jamming & Anti-Spoofing

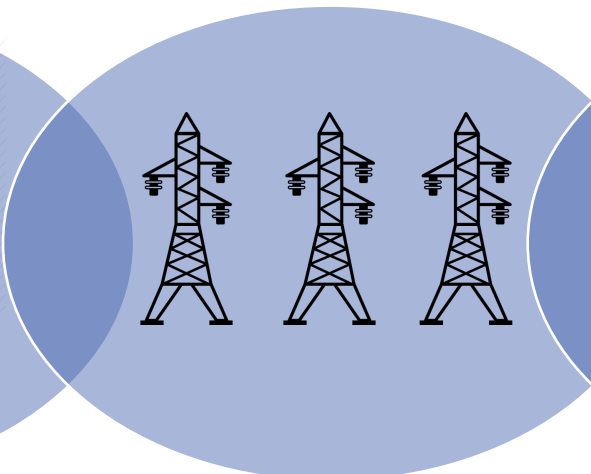
- Digital Substation Evolution
IRIG → NTP → PTP
- IEEE 1588 PTP v2
- IEEE C.37.238
- IEC/IEEE 61850-9-3
- IEC 62439-3 HSR/PRP

Generation



M3000

Transmission

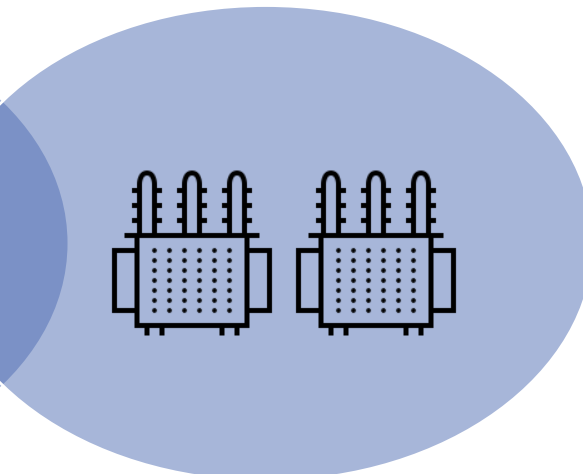


M1000



M500

Distribution



microSync



Displays, Slave Clocks,
& Signal Distribution

LANTIME NTP Servers



M200



M300

microSync PTP Grandmasters



microSync HR



microSync RX

IMS = Intelligent Modular System



M1000



M3000

Meinberg Products

Three Main Platforms

Meinberg Accessory Products

- **Signal Distribution Unit (SDU)** – 1:12 or 1:24 fanout of PPS, 10 MHz, IRIG, and E1/T1 signals
- **Fiber-Optic Converter (CON)** – enables long-distance (2k or 10 km) transmission of PPS, 10 MHz, IRIG, and RS232 signals over fiber
- **SyncBox N2X** – converts NTP or PTP to IRIG, 10 MHz, PPS, DCF77, and serial time telegrams

Very popular in power grid and defense applications



Thank You!

MEINBERG

The Synchronization Experts.