Meinberg
Company Presentation

Allan Armstrong
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Introducing Meinberg

- Founded in 1979
- HQ in Bad Pyrmont, Northern Germany
- Entirely Focused on Synchronization
- Global NTP & PTP Technology Leader
- Consistent Track Record of Growth

https://www.meinberg-usa.com/
Global Leadership

Meinberg products synchronize a lot of critical infrastructure on this planet

- Mobile
- Datacenter
- Defense
- Air Traffic Control
Industry-Specific Synchronization Solutions
Capacity & Density = Scalability

**M3000: 3U chassis**
- Up to 20,480 unicast clients
- Up to 2,621,440 delay requests/s
  - 3x more than closest competitor

**Standards**
- MiFID II & MiFIR
- FINRA
- CAT NSM
- SEC Rule 613
- ESMA
Remote Sports & News Collection
Outside Broadcast Van

- Blackburst (PAL/NTSC) with VITC
- Tri-Level Sync
- DARS
- LTC
- AES Genlock/Word Clock

Studio Production

- SMPTE ST 2022
- SMPTE ST 2110
- SMPTE ST 2059
- AES67

Distribution & Streaming Infrastructure

SDI  ➤ IP

microSync  ➤ M1000  ➤ M3000
• 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

Transmission

Generation

Distribution

Displays, Slave Clocks, & Signal Distribution

M3000
M1000
M500
microSync
Wholly-Owned Factory

Advantages

1. **R&D-Manufacturing Collaboration**  
   – cycle time, responsiveness
2. **Control of our Supply Chain**  
   – assurance of supply – lead times
3. **Security**  
   – we control BoM
Entirely Focused on Synchronization

Since 1979