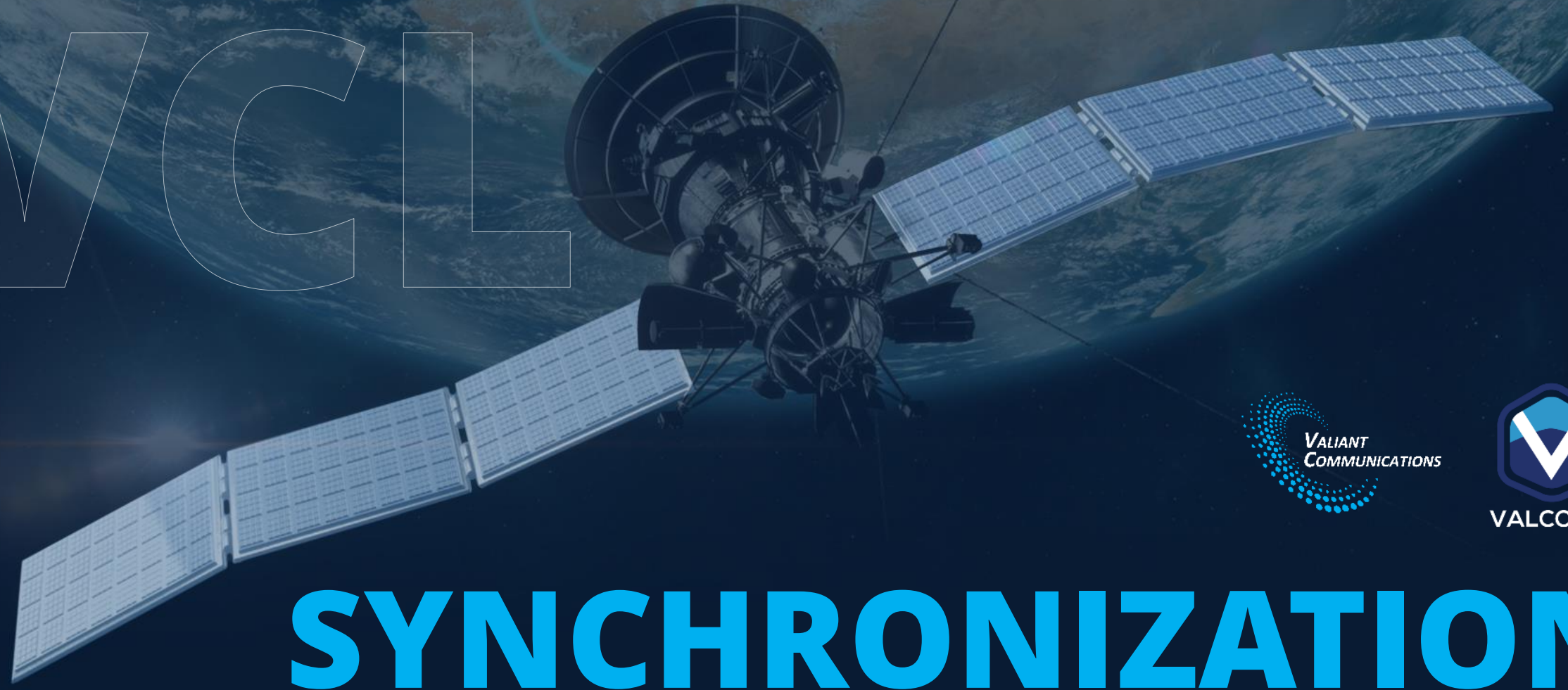


WCLL



VALCOMM

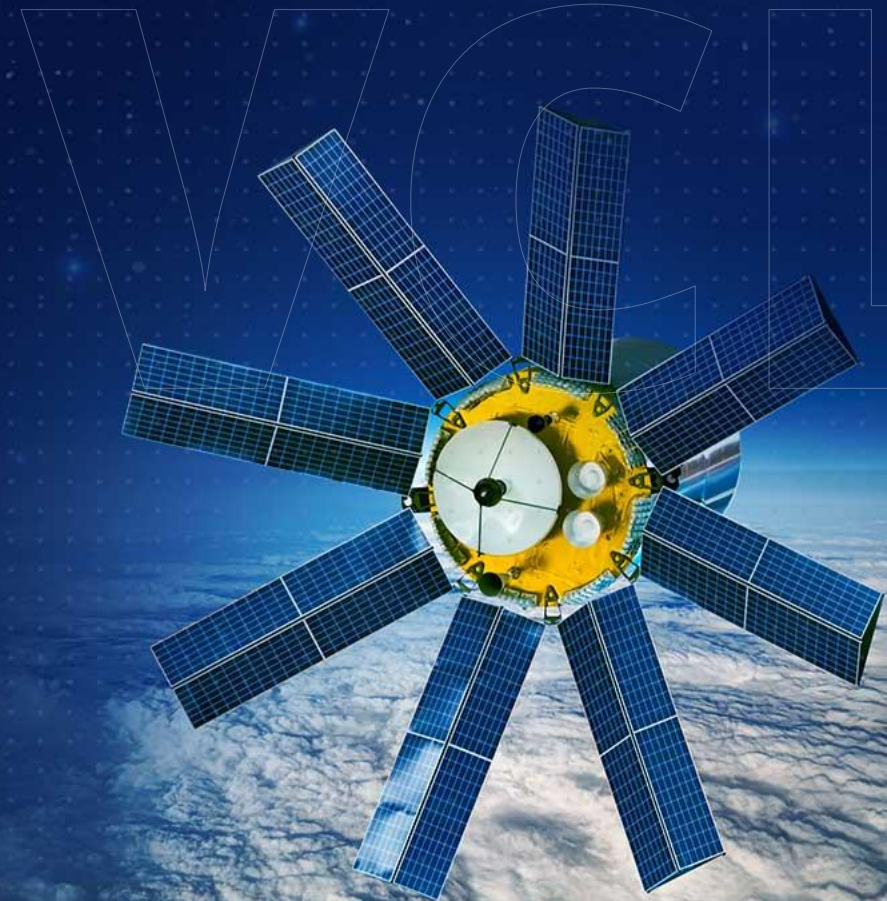
# SYNCHRONIZATION SOLUTIONS

# GPS/GNSS Synchronization solution



- Time Synchronization – **PTP 1588v2, NTP**
- Time Distribution – **NTP, IRIG-B**
- Frequency and Phase
  - **Primary Reference Clock, PTP 1588v2**

GPS/GNSS





# NTP TIME SERVERS



- NTP Time Servers\* with 1G and 10G Options
- NTP Client / NTP Slave

*\*From 5000 to more than 1 Million requests per second.*

# NTP





# PTP 1588v2 (Precision Time Protocol)

- PTP 1588v2 Grandmaster
- PTP Slave Clocks
- PTP Switches
- PTP Transparent Clocks

PTP  
1588v2

# GPS/GNSS

## Primary Reference Clock (ITU-T G.811)

- Primary Reference Master Clocks (ITU-T G.811)
- SSU (Synchronization Supply Unit)
  - fully redundant (1+1) architecture
    - GPS/GNSS, E1, NTP, PTP

VCL





# TIME DISTRIBUTION SOLUTIONS



- GPS/GNSS/NTP
- Supported interfaces IRIG-B, 1 PPS, NMEA, 1/5/10MHz, 2.048MHz, 2.048Mbits clock outputs
- GPS to IRIG-B converters
- NTP to IRIG-B converters
- PTP to IRIG-B converters

VCL



# VCL UNIFIED NMS

Network Management Software



Monitor all Synchronization devices **From Central location**

It monitors, logs and reports **alarms and events** in "real-time"

This platform provides the user, the data, to conduct real time **Network Synchronization analysis**

Identify the points of **Network disruption**



# PRESTIGIOUS REFERENCE CUSTOMERS



## End-users, using VCL equipment



ABB



Siemens



Schneider Electric



Power Grid (PGCIL)



Turkish Electricity Company



Tantransco



Perusahaan Listrik Negara



Vietnam Electricity



TNB Malaysia



National Grid Philippines



AXPO Switzerland



Harris Corporation



Sri Lanka Railways



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MSCTCL



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# GLOBAL DISTRIBUTION NETWORK





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