



Network  
Synchronization  
solutions

PolyNet Ltd.

# Introduction to Atomic Clocks

Szigeti Viktor, Managing Director

2023

# The Country we are from

**2023**

**Katalin Karikó**

Physiology/Medicine  
„mRNA vaccines  
against COVID-  
19”

**2023**

**Ferenc Krausz**

Physics  
„generating  
attosecond pulses  
of light”

**16 Nobel  
Prize  
winners**

**Neumann  
János**  
Inventor of  
Computer

**Puskás  
Tivadar**  
Inventor of  
telephone switch

**Ernő Rubik**

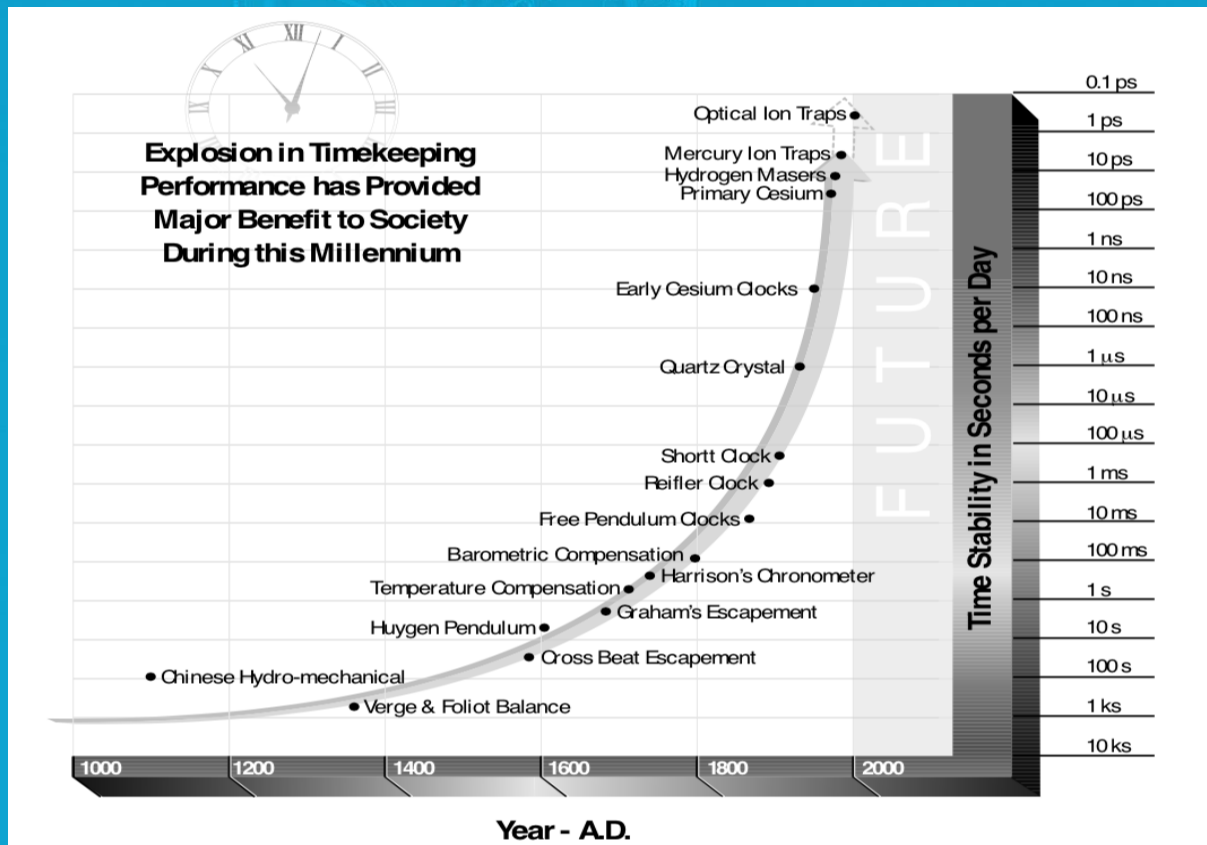


# But what have the atomic clocks ever done to us?



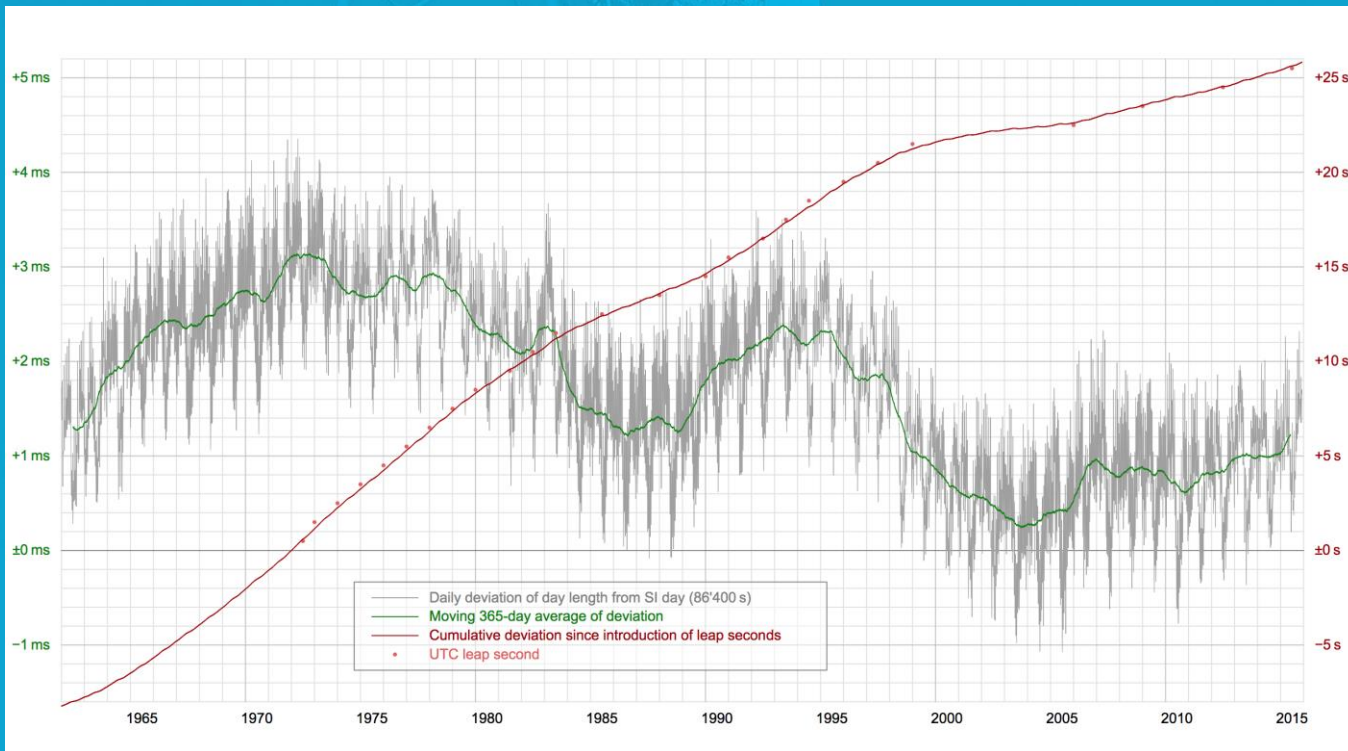


# But what have the atomic clocks ever done to us?



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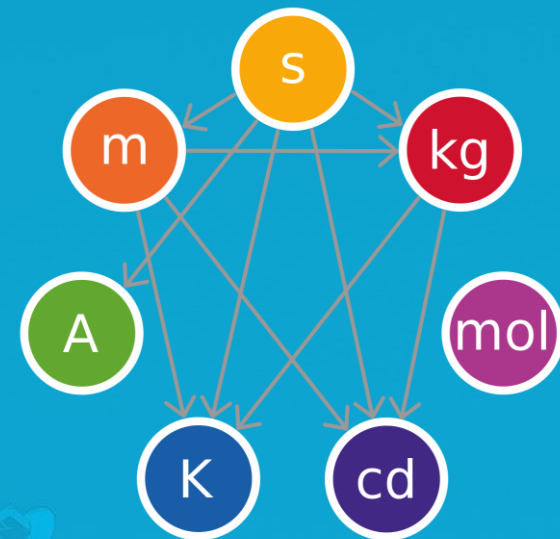
Universal Time Coordinated



# But what have the atomic clocks ever done to us?

## Systeme Internationale des unités SI

SI base units		
Symbol	Name	Quantity
s	second	time
m	metre	length
kg	kilogram	mass
A	ampere	electric current
K	kelvin	thermodynamic temperature
mol	mole	amount of substance
cd	candela	luminous intensity



# But what have the atomic clocks ever done to us?

Positioning systems,

Navigation

Precise time for everybody

Interactive social commuting

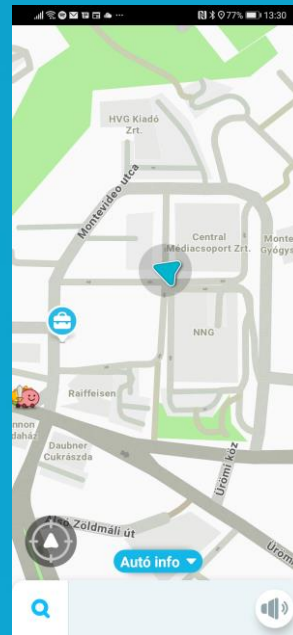
Land survey, mapping

Tracking services

Drones

Geological slow motion monitoring

...





# But what have the atomic clocks ever done to us?

## Worldwide telecommunication systems

- Landline, satellite and mobile
- 2G, 3G, 4G LTE, 5G-t
- High Speed Trading Systems
- Internet of Things





# But what have the atomic clocks ever done to us?

5G Holographic Concert Demo





# But what else can we use the atomic clocks for?

Precision Agriculture: reduced or zero chemicals

Next generation, computerized farming



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# But what else can we use the atomic clocks for?

Self driving, social commuting





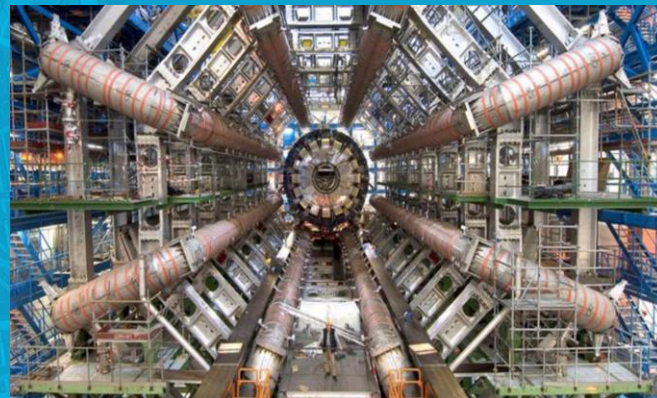
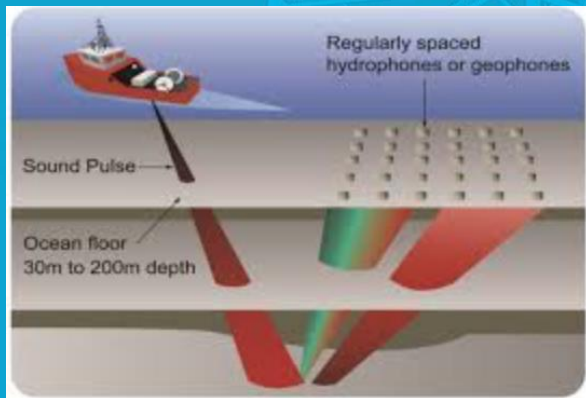
# But what else can we use the atomic clocks for?

Remote medical procedures

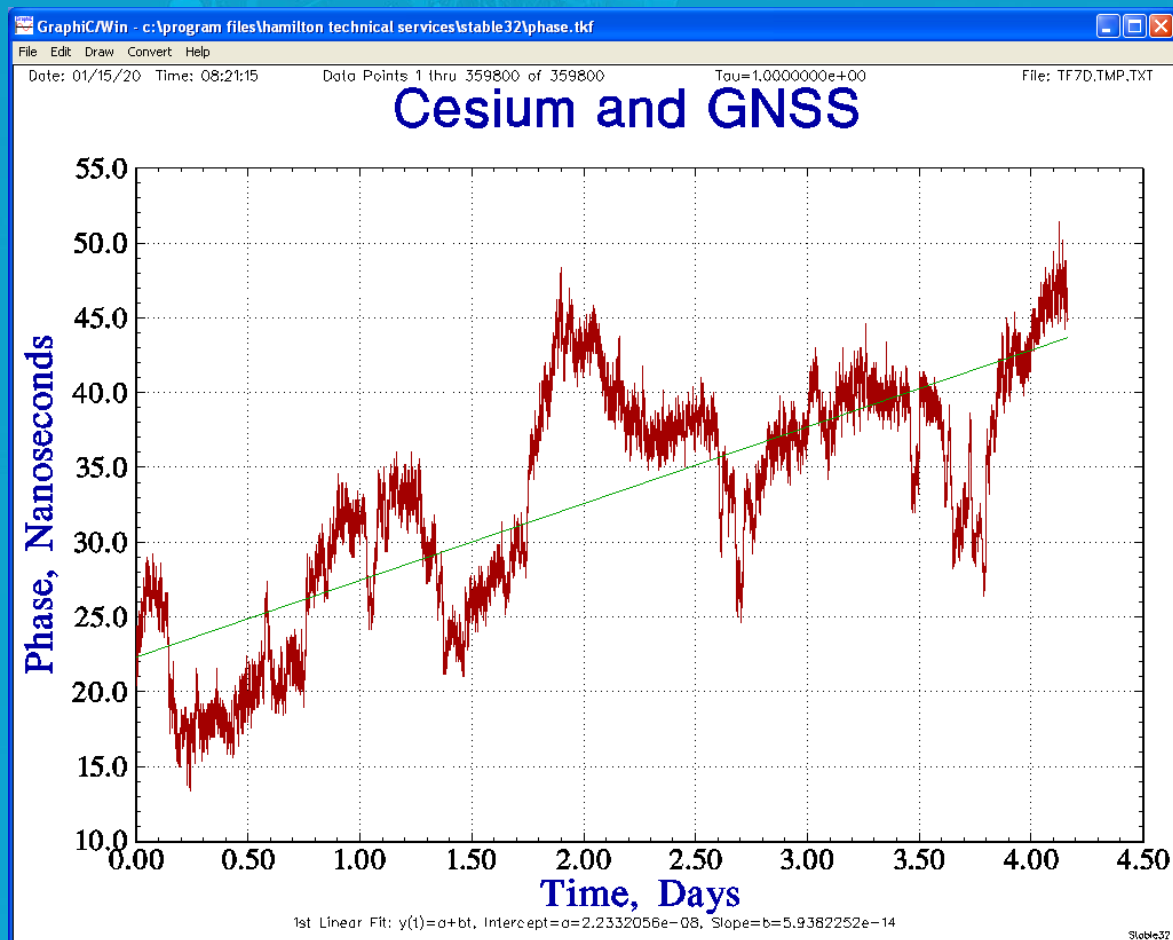




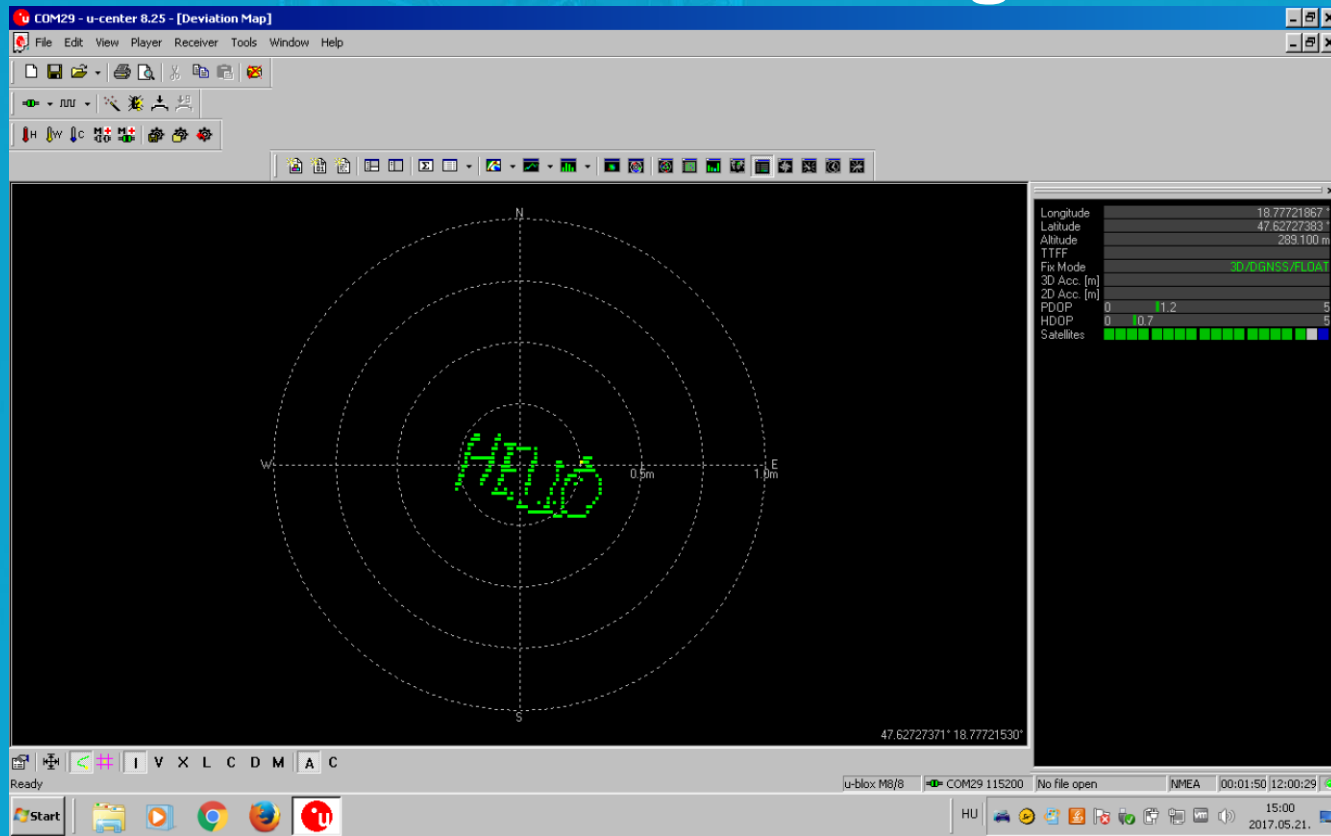
# Research



# CESIUM vs GNSS



# DGNSS testing



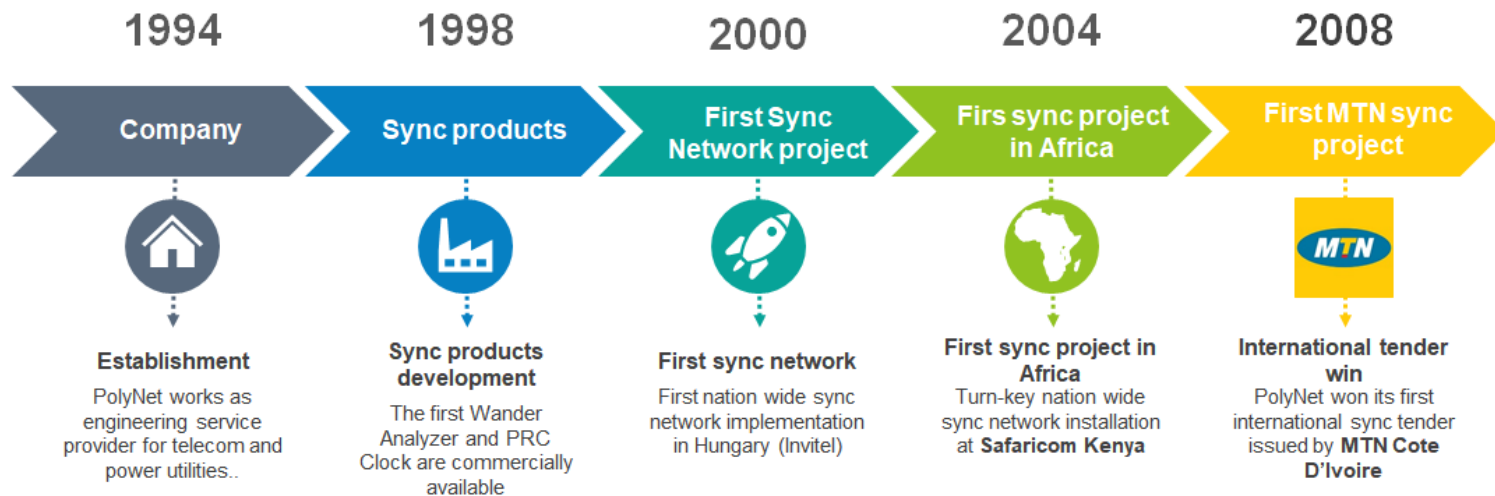
# PolyNet Worldwide



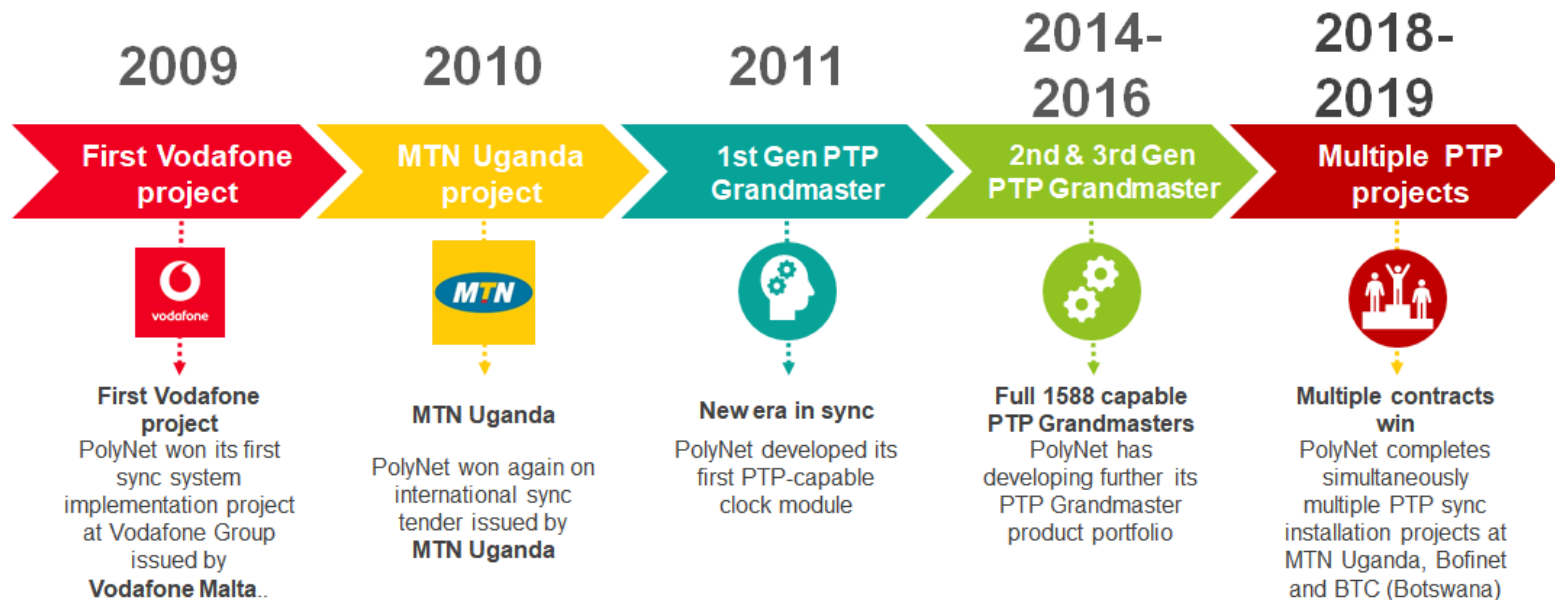




# PolyNet History



# PolyNet History





# PCAC1000 Cesium Atomic Clock



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# IEEE1588V2 PTP Grandmaster/Boundary Clocks Telecom







# IEEE1588V2 PTP Grandmaster/Boundary Clocks Power Utilities

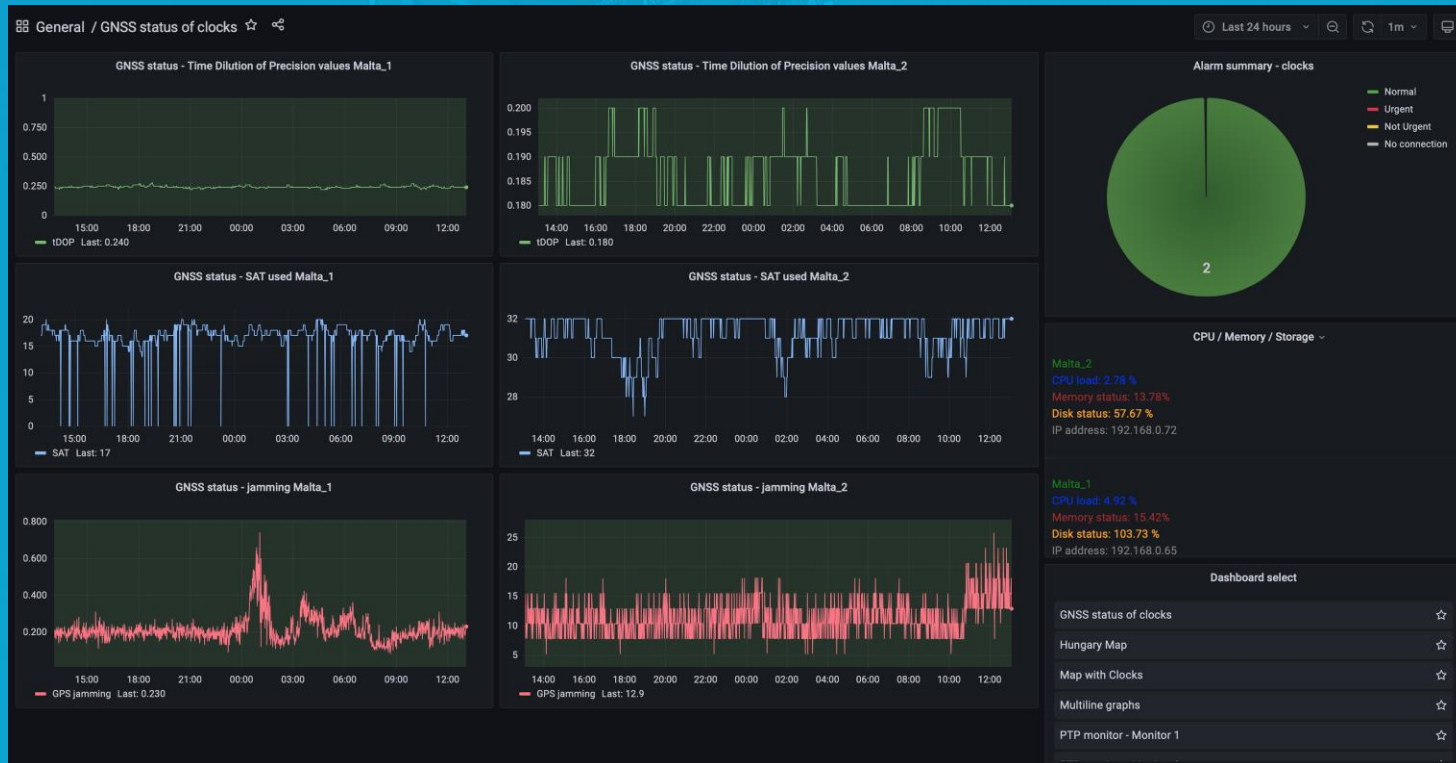




# Ptest 5G Synchronization Analyzer and Ethernet/IP Tester



# Next Generation Sync Performance Monitoring System







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Thank You!