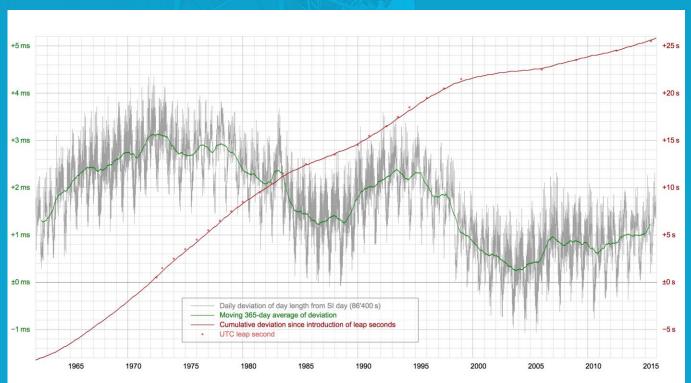




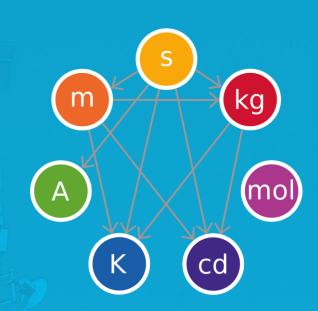
Universal Time Coordinated





Systeme Internationale des unitées SI

	SI base units
Mama	
name	Quantity
second	time
metre	length
kilogram	mass
ampere	electric current
kelvin	thermodynamic temperature
mole	amount of substance
candela	luminous intensity
	metre kilogram ampere kelvin mole





Positioning systems,

Navigation
Precise time for everybody
Interactive social commuting
Land survey, mapping
Tracking services
Drones
Geological slow motion monitoring





•••







Worldwide telecommunication systems

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









5G Holographic Concert Demo





But what else can we use the atomic clocks for?

Precision Agriculture: reduced or zero chemicals
Next generation, computerized farming





But what else can we use the atomic clocks for?

Self driving, social commuting







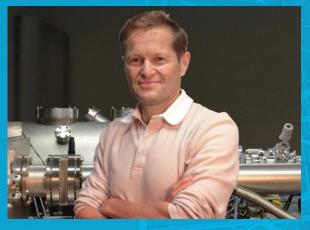
But what else can we use the atomic clocks for?

Remote medical procedures

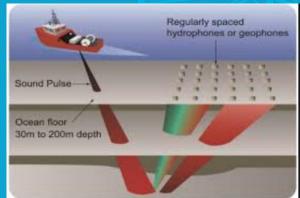


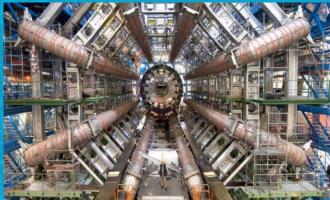


Research



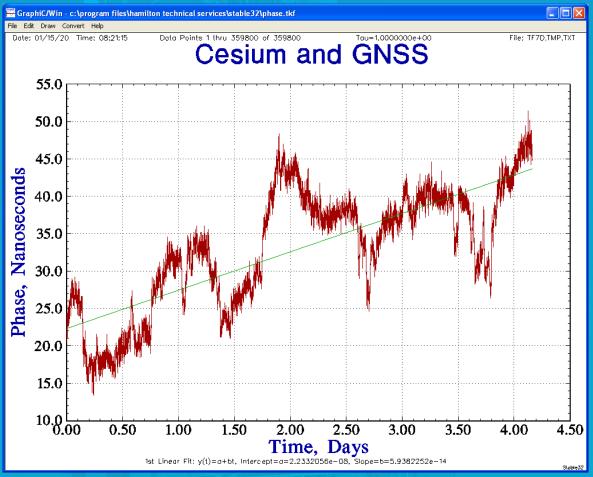






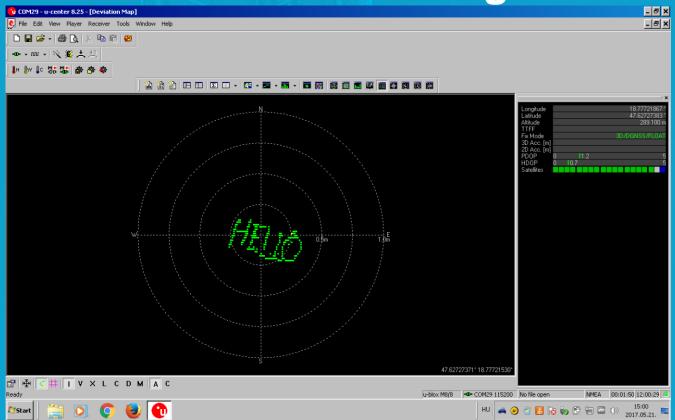


CESIUM vs GNSS





DGNSS testing



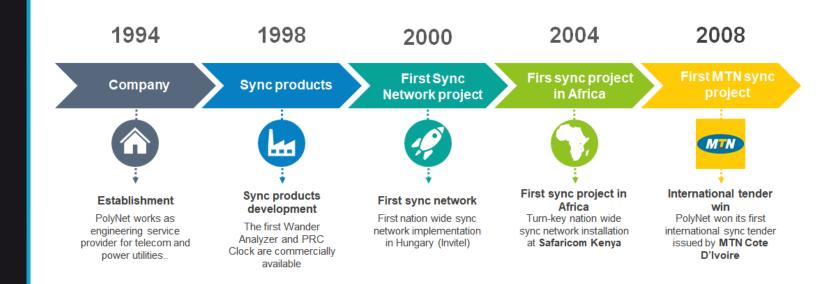


PolyNet Worldwide





PolyNet History





PolyNet History

2009

First Vodafone project

Ovodafone

First Vodafone

First Vodafon project

PolyNet won its first sync system implementation project at Vodafone Group issued by Vodafone Malta 2010

MTN Uganda

2011

2014-2016

2nd & 3rd Gen

2018-2019

e



MTN Uganda

PolyNet won again on international sync tender issued by MTN Uganda

1st Gen PTP Grandmaster



New era in sync

PolyNet developed its first PTP-capable clock module



Full 1588 capable PTP Grandmasters

PolyNet has developing further its PTP Grandmaster product portfolio Multiple PTP projects



Multiple contracts win

PolyNet completes simultaneously multiple PTP sync installation projects at MTN Uganda, Bofinet and BTC (Botswana)



PCAC1000 Cesium Atomic Clock





IEEE1588V2 PTP Grandmaster/Boundary Clocks Telecom





IEEE1588V2 PTP Grandmaster/Boundary Clocks Power Utilities





Ptest 5G Synchronization Analyzer and Ethernet/IP Tester





Next Generation Snyc Performance Monitoring System





```
Sync Rate IRIG-B 2MHz Variance GPS SNMP OCXO E2E Timestamp PTP Multicast ITU-T GB275.1 Beidou PRTC-B
Transparent Clock 10MHz Rubidium Oscillator Glonass Hybrid Mode G.8275.2 Boundary Clock Multiband Peer
Delay GNSS Cesium Holdover TDM PDV Delay Request HW Timestamping PRC SFP Ethernet One-Step MDS 1024
Client Precision NMS Nanosecond BITS TIE Asymmetry Performance TE CLI FPP 256Hz PTP Profiles E1 TO Galileo
ClockClasses Sync Gateway Edge Master Antenna Delay G.8264 Peer Delay Network NMS IEEE1588V2-2008 1PPS
TOD RJ45 PRTC-A ESMC IPv6 ITU-T G.8265.1 Unicast NTPv4 VLAN G.8261 Sync Rate IRIG-8 2MHz Variance GPS
     OCXO E2E Timestamp PTP Multicast ITU-T G8275.1 Beidou PRTC-B Transparent Clock 10MHz Rubidium
Oscillator Glonass Hybrid Mode G.8275.2 Boundary Clock Multiband Peer Delay GNSS Cesium Holdover TDM PDV
Delay Request HW Timestamping PRC SFP Ethernet One-Step MDS 1024 Client Precision NMS Nanosecond BITS
E Asymmetry Promotes E1 Travelle alileo CockClass Sync Gatewa / Edge Master
ntenna lelay G 3264 Peer Dela Networ S IEEE1588V 08 1PPS TOD F 5 PRTC 1C IPv6 ITU-T
 .8265.1 Unicas' NTPv4 AN G. 51 Sync RIG-B 2N riance GPS SNN OCXO E2E tamp I
Iulticas 'T' 3275.1 Beidou TC-B Tr nt Cloc 1z Rubidium Os ator Global prid Monte
 .8275.2 Clock Mu' nd Peer Del GNSS n Holc ver TI PDV Delay quest I
Timestamping PRC SFP Ethernet One-Step MDS 1024 Client Precision NMS Nanosecond BITS TIE Asymmetry
Performance TE CLI FPP 256Hz PTP Profiles E1 TO Galileo ClockClasses Sync Gateway Edge Master Antenna Delay
G.8264 Peer Delay Network NMS IEEE1588V2-2008 1PPS TOD RJ45 PRTC-A ESMC IPv6 ITU-T G.8265.1 Unicast
NTPv4 VLAN G.8261 Sync Rate IRIG-8 2MHz Variance GP5 SNMP OCKO E2E Timestamp PTP Multicast ITU-1
G8275.1 Beidou PRTC-B Transparent Clock 10MHz Rubidium Oscillator Glonass Hybrid Mode G.8275.2 Boundary
Clock Multiband Peer Delay GNSS Cesium Holdover TDM PDV Delay Re us
One-Step MD5 1024 Client Precision NMS Nanosecond BITS TIE Asym ne
```

Profiles E1 TO Galileo ClockClasses Sync Gateway Edge Master Antenna Delay G.8264 Peer Delay Network NMS

8 2MHz Variance GPS SNMP OCXO E2E Timestamp PTP Multicast ITU-T G8275.1 Beidou PRTC-B Transparent Clock

-2008 1PPS TOD RU45 PRTC-A ESMC IPv6 ITU-T G.8265.1 Unicast NTPv4 VLAN G.8261 Sync Rate IRIG-

Network NMS IEEE1588V2-2008 1PPS TOD RJ45 PRTC-A ESMC IPv6 ITU-T G.8265.1 Unicast NTPv4 VLAN G.8261