

# **GÉANT Infoshare: European Time and Frequency Services - Principles, Challenges and Use Cases**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## **Zoom room test**

*Tuesday, March 9, 2021 12:30 PM (30 minutes)*

Contribution ID: 2

Type: **not specified**

## Welcome and Introduction

*Tuesday, March 9, 2021 1:00 PM (10 minutes)*

OTFN white paper - [https://www.geant.org/Resources/Documents/GN4-3\\_White-Paper\\_Time\\_and\\_Frequency.pdf](https://www.geant.org/Resources/Documents/GN4-3_White-Paper_Time_and_Frequency.pdf)

**Presenter:** Mr QUINTIN, Nicolas (GIP-RENATER)

**Session Classification:** Session 1

Contribution ID: 3

Type: **not specified**

## Why are optical T/F services so popular?

*Tuesday, March 9, 2021 1:10 PM (20 minutes)*

This presentation aims to overview why there is a such a worldwide enthusiasm for new optical Time and Frequency services. Dr Harald Schnatz (PTB) will present the historical background of these new services and why they could be so usefull in scientific, societal and economic domains.

**Presenter:** Dr SCHNATZ, Harald (PTB)

**Session Classification:** Session 1

Contribution ID: 4

Type: **not specified**

## Time and Frequency services for end-users

*Tuesday, March 9, 2021 1:30 PM (20 minutes)*

While the number of potential T/F end-users keeps growing, several techniques have been deployed (optical carrier techniques using different wavelength, modulation techniques, unidirectional, bidirectional...) Jani Myyry will give us an overview of the existing techniques and help us understand the main differences (advantages and drawbacks) in different scenarios.

**Presenter:** Mr MYYRY, Jani (CSC/Funet)

**Session Classification:** Session 1

Contribution ID: 5

Type: **not specified**

## Time and frequency requirements for radio astronomical interferometry

*Tuesday, March 9, 2021 1:50 PM (15 minutes)*

Interferometry is a technique in radio astronomy where the signals of multiple radio telescopes are combined, creating a single virtual telescope with a much improved resolution. This requires the transport of large amounts of data, and the distribution of a very stable reference frequency and timing signal to each of the receptors. In this presentation I will highlight several examples and their results, such as our use of an improved White Rabbit to distribute reference signals for VLBI observations.

**Presenter:** Mr BOVEN, Paul (JIVE "Joint Institute for VLBI ERIC")

**Session Classification:** Session 1

Contribution ID: 6

Type: **not specified**

## Current T&F situation in NREN networks

*Tuesday, March 9, 2021 2:30 PM (40 minutes)*

Optical Time and Frequency networks do already exist in the NREN community. In this presentation, Josef Vojtech (CESNET) will present some existing setups underlying their differences, choices of architecture and objectives. We hope this will encourage NREN that are not familiar with optical Time and Frequency to get in touch with this new type of fibre usage.

**Presenter:** Dr VOJTECH, Josef (CESNET)

**Session Classification:** Session 2: Current situation in NREN networks

Contribution ID: 8

Type: **not specified**

## Q&A session and open discussion

*Tuesday, March 9, 2021 3:10 PM (20 minutes)*

Q&A session and open discussion using the friendly mentimeter tool.

**Presenter:** Mr QUINTIN, Nicolas (GIP-RENATER)

**Session Classification:** Session 2: Current situation in NREN networks



Contribution ID: 9

Type: **not specified**

## T&F Research and Innovation projects (CLONETS-DS, TIFOON)

*Tuesday, March 9, 2021 2:20 PM (10 minutes)*

CLONETS-DS aims to establish a pan-European time and frequency reference system as a European Research Infrastructure to serve the science community. It will follow the recommendations of TIFOON's technical project which will advance fibre-based frequency transfer capabilities in Europe towards a universal tool for time and frequency metrology by developing combined time and frequency techniques with enhanced performance, while ensuring compatibility with optical telecommunication networks.

**Presenter:** Mr BOGACKI, Wojbor (PSNC)

**Session Classification:** Session 2: Current situation in NREN networks