

# EP-nu Meeting

21/1/2021

# New members in EP-Nu as of 1/1/2021

Lluís Miralles Verge



From General Infrastructure Services Department (GS)

Activities:

- T2K ND280 upgrade at NP
- DUNE cryostat risk assess.

Allesandro Thea



New scientific assoc.

Activities:

- DUNE DAQ
- Vertical drift studies

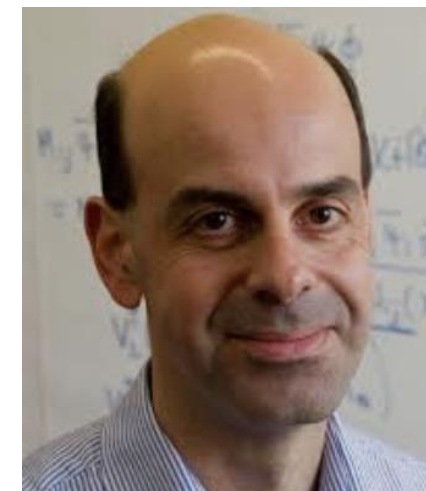
Lorenzo Uboldi



Junior Fellow EU “INTENSE”  
Activities (prelim)

- Neutron gun data analysis
- Work with manuel and Saul

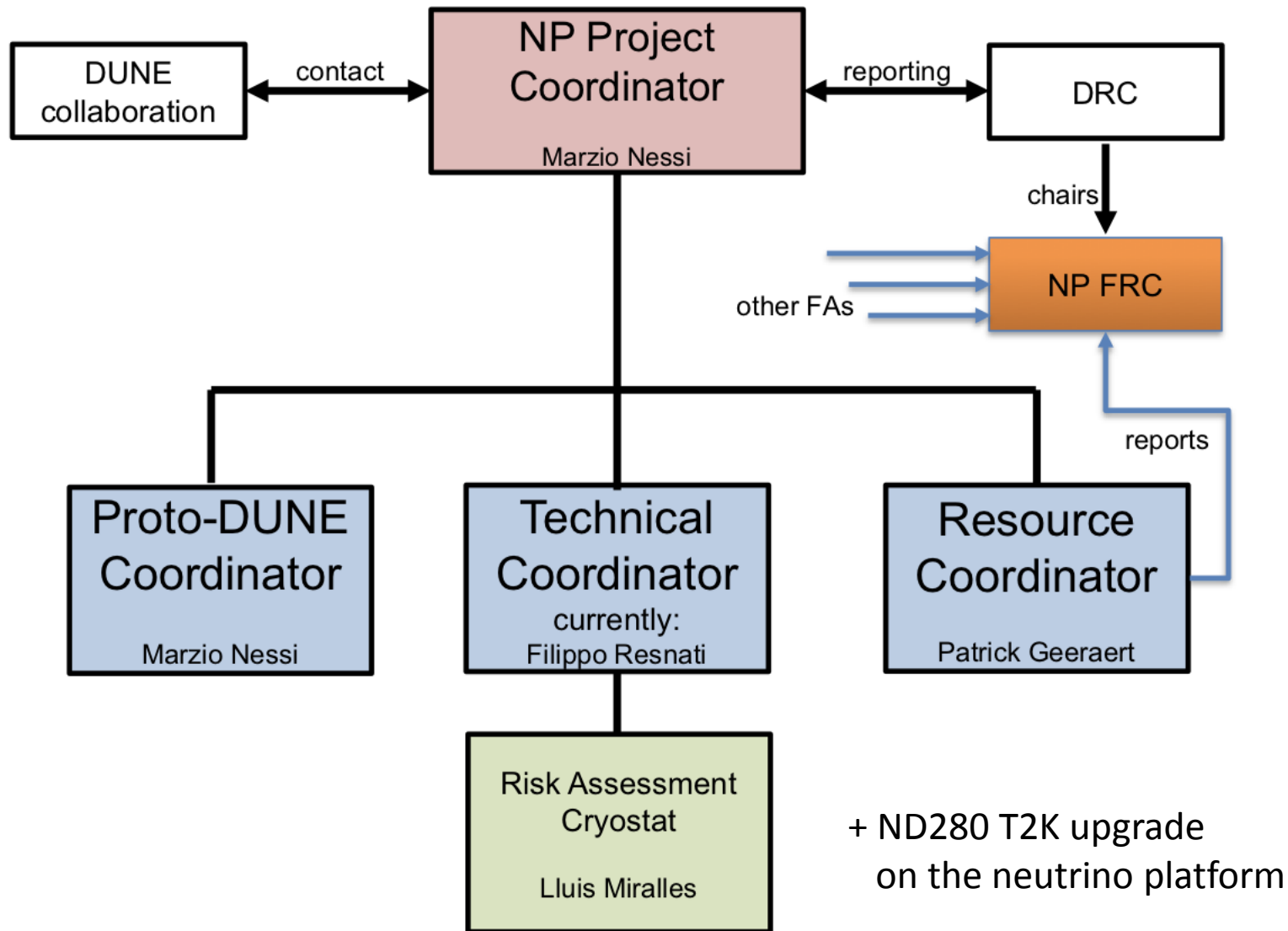
Emmanuel Tsesmelis



International Relations  
Activities

- Nustorm and ENUBET
- Far future: neutrino beams & detectors at muon colliders

Welcome to EP-nu



Council signaled green light:  
CERN will provide a second cryostat to LBNF/Dune

# A propos: News on Neutrino-4

## Neutrino-4 anomaly: oscillations or fluctuations?

C. Giunti,<sup>1,\*</sup> Y.F. Li,<sup>2,3,†</sup> C.A. Ternes,<sup>1,‡</sup> and Y.Y. Zhang<sup>2,3,§</sup>

<sup>1</sup>*Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Torino, Via P. Giuria 1, I-10125 Torino, Italy*

<sup>2</sup>*Institute of High Energy Physics, Chinese Academy of Sciences, Beijing 100049, China*

<sup>3</sup>*School of Physical Sciences, University of Chinese Academy of Sciences, Beijing 100049, China*

(Dated: 17 January 2021)

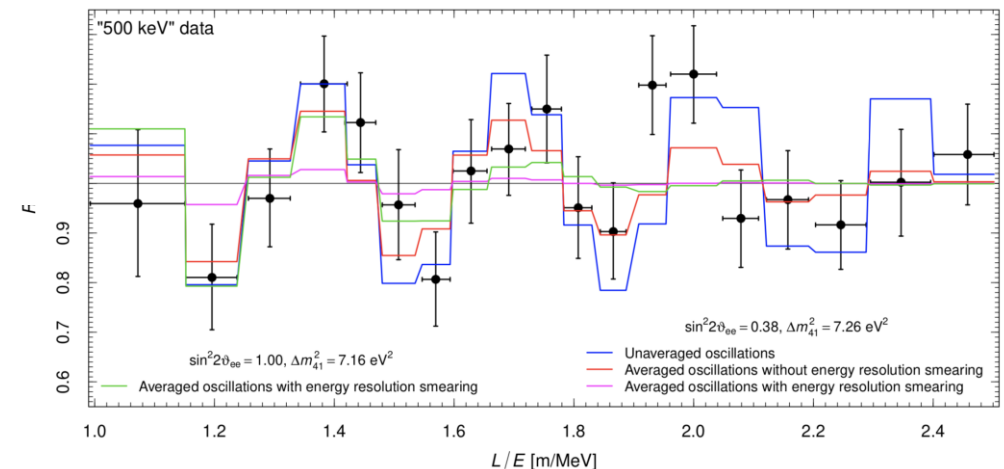
We present a deep study of the Neutrino-4 data aimed at finding the statistical significance of the large-mixing short-baseline neutrino oscillation signal claimed by the Neutrino-4 collaboration at more than  $3\sigma$ . We found that the results of the Neutrino-4 collaboration can be reproduced approximately only by neglecting the effects of the energy resolution of the detector. Including these effects, we found that the best fit is obtained for a mixing that is even larger, close to maximal, but the statistical significance of the short-baseline neutrino oscillation signal is only about  $2.7\sigma$  if evaluated with the usual method based on Wilks' theorem. Using a more reliable Monte Carlo simulation of a large set of Neutrino-4-like data, we found that the statistical significance of the Neutrino-4 short-baseline neutrino oscillation signal decreases to about  $2.2\sigma$ . We also show that it is not unlikely to find a best-fit point that has a large mixing, even maximal, in the absence of oscillations. Therefore, we conclude that the claimed Neutrino-4 indication in favor of short-baseline neutrino oscillations with very large mixing is rather doubtful.

Important for ICARUS physics program

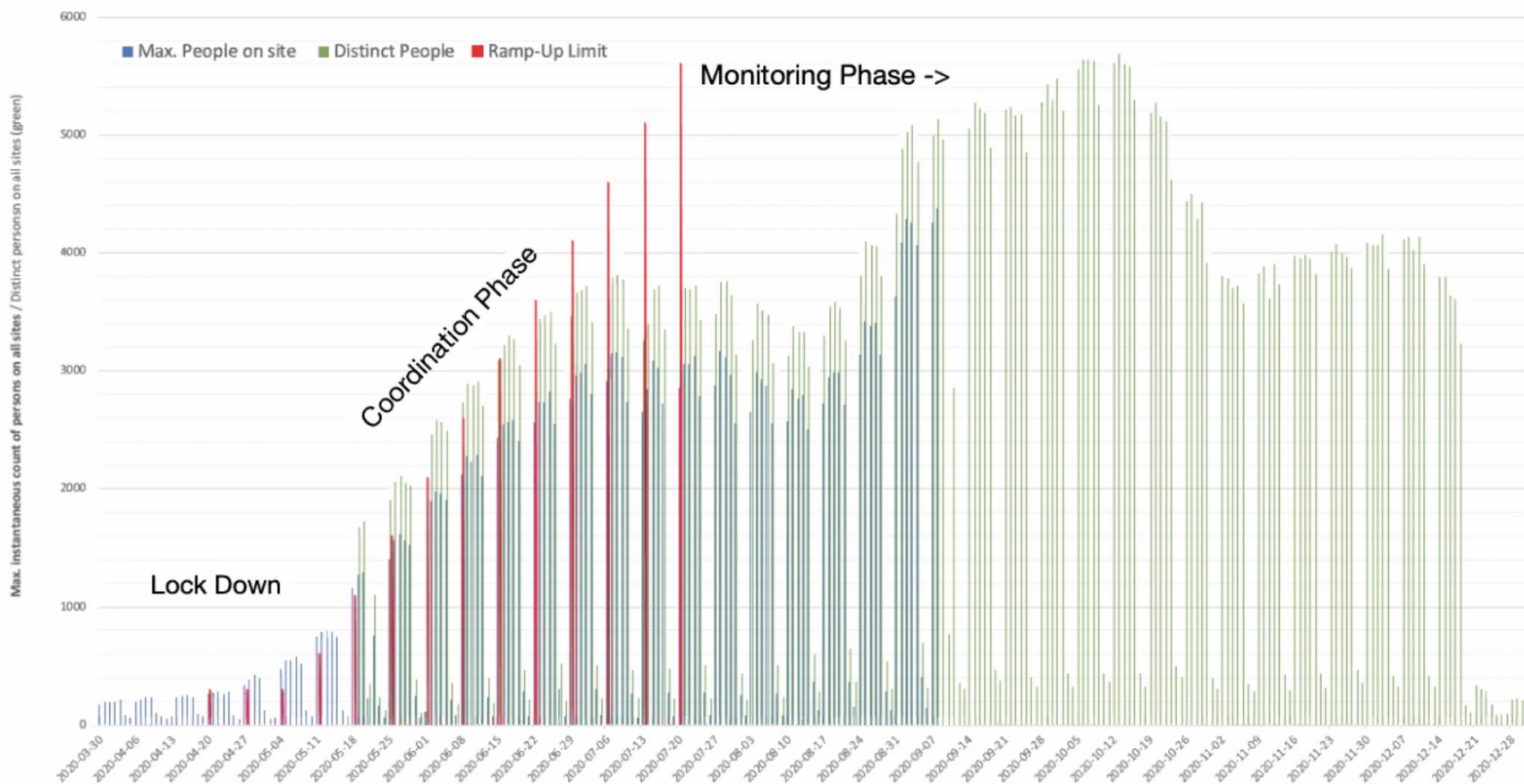
arXiv:2101.06785

### Data analysis strongly criticized

- Issues with the energy resolution
- Less biased approach  $\rightarrow \sim 2.2\sigma$  effect only
- “No-oscillation scenario” not excluded at  $3\sigma$

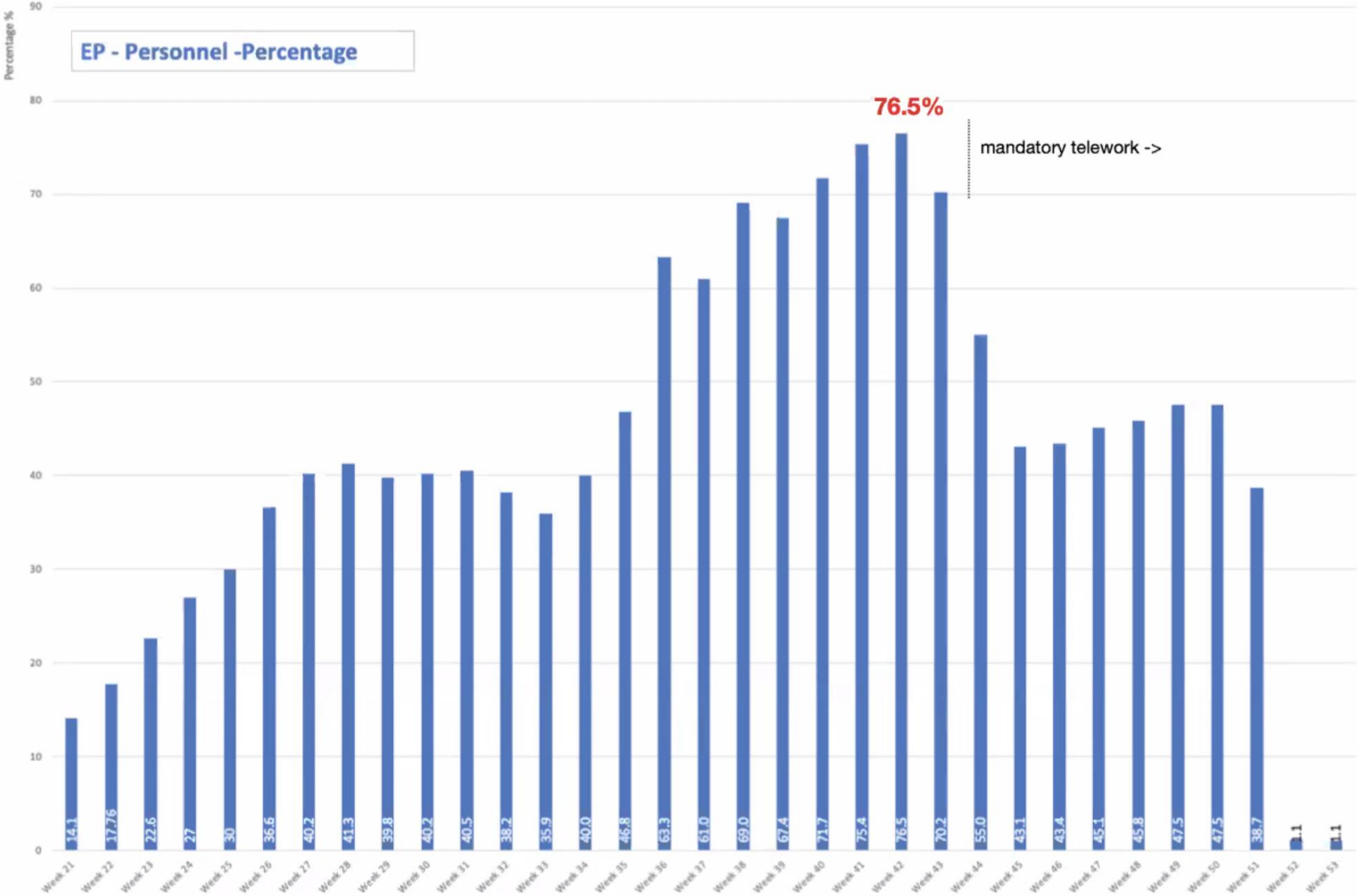


# CERN Presence On Site 2020 (CoVid) - Recap

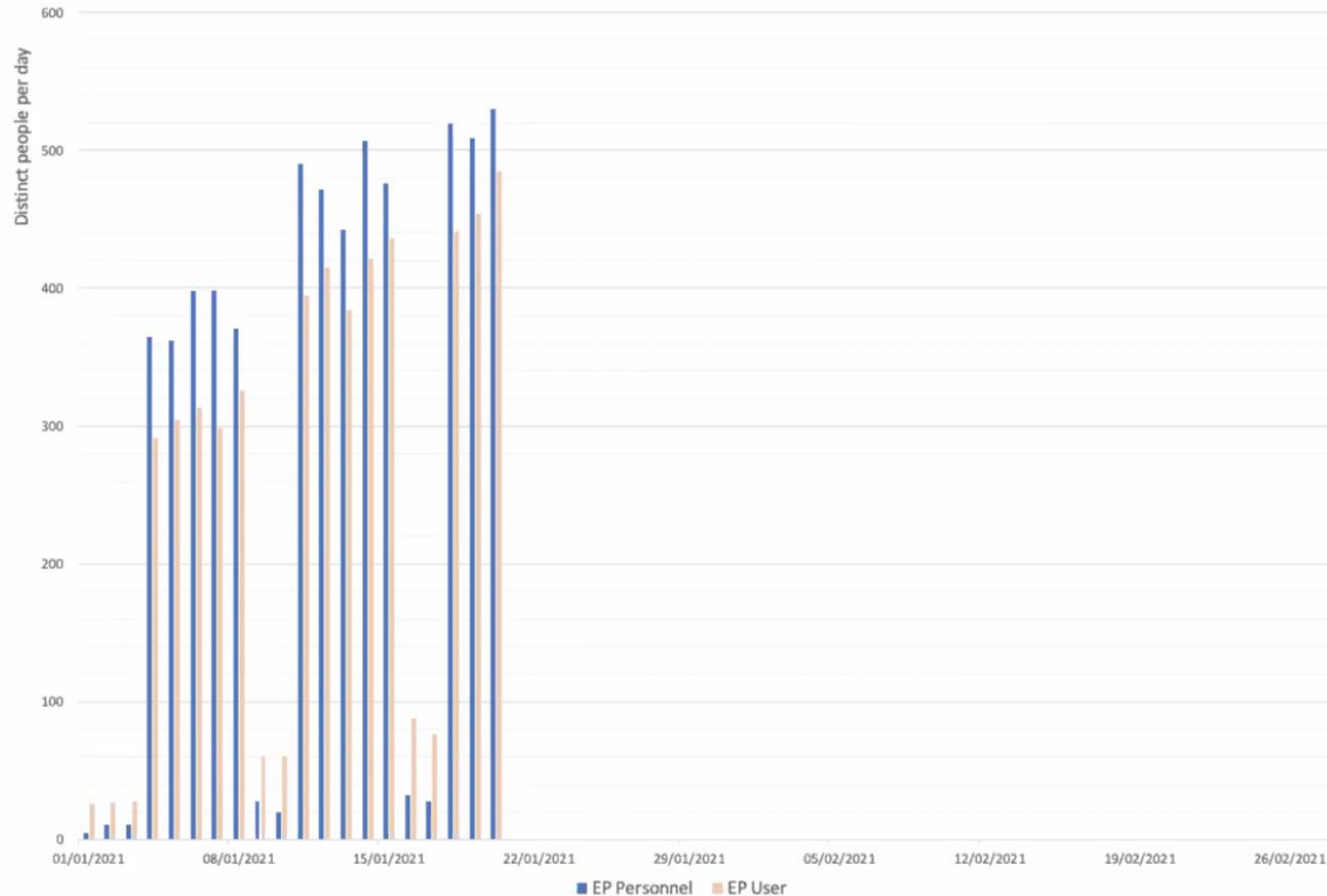


- After Lock Down, there was the need for a coordination phase to stay within the ramp up
- After July, we entered a monitoring phase not knowing that the ramp up would be a bit more complicated....
- Presence on site information (blue) was lost in September

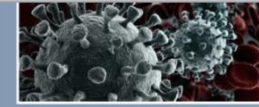
# EP - Week Average Percent of Personnel On Site



# EP - Personnel / User



- Wed. 20.0.2021, we had 530 (= 48%) Personnel visiting the CERN sites + 485 User



## Recent news

- ❑ Number of positive cases from CERN's personnel since beg of pandemic: **281** (none contracted on-site)
- ❑ Current telework framework (100% telework mandatory for people who can telework and are not needed on site) extended until end of Feb. This is still aligned with recent (tighter) restrictions in CH and F.

## Covid-19 testing at CERN

RT-PCR tests started with support of a medical lab in Meyrin (Proxilis):

- ❑ tested at Proxilis: suspected cases, close contacts and people coming from high-risk countries (the latter only when presence on site is crucial for CERN's activities)
- ❑ tested on-site (as of 25 Jan): vulnerable people or people who have to travel for professional reasons (once current restrictions lifted); periodic tests of exposed groups (e.g. control-room shifters)
- ❑ duration of isolation (suspected cases) or quarantine (close contacts) determined by Medical Service based also on test results

## Covid-19 vaccination

- ❑ Personnel, family members and retirees resident in France or CH will be called by the Host State in which they reside according to priority, i.e. vulnerable and exposed people first. CERN is making sure that our community is included in the national plans. Swiss-card holders resident in France can be vaccinated in CH.
- ❑ CERN is exploring with Host States possibility of on-site vaccination → will take time as current vaccine's availability limited, and distribution restricted to few designated centres in the countries.

## Proximeter

Essential for rapid, comprehensive, sustainable contact-tracing → to break infection chain and protect health of people on-site. Mandatory as of 1 March.

1000 out of 10000 distributed so far → please book a slot to collect yours:

<http://www.cern.ch/proximeter-dist>

