

# EUROPEAN SPACE WEEK

#EUSpaceWeek

ONLINE EDITION

# Galileo Performance

EU Space Week, December 2020

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Organised by:



Under the auspices of:

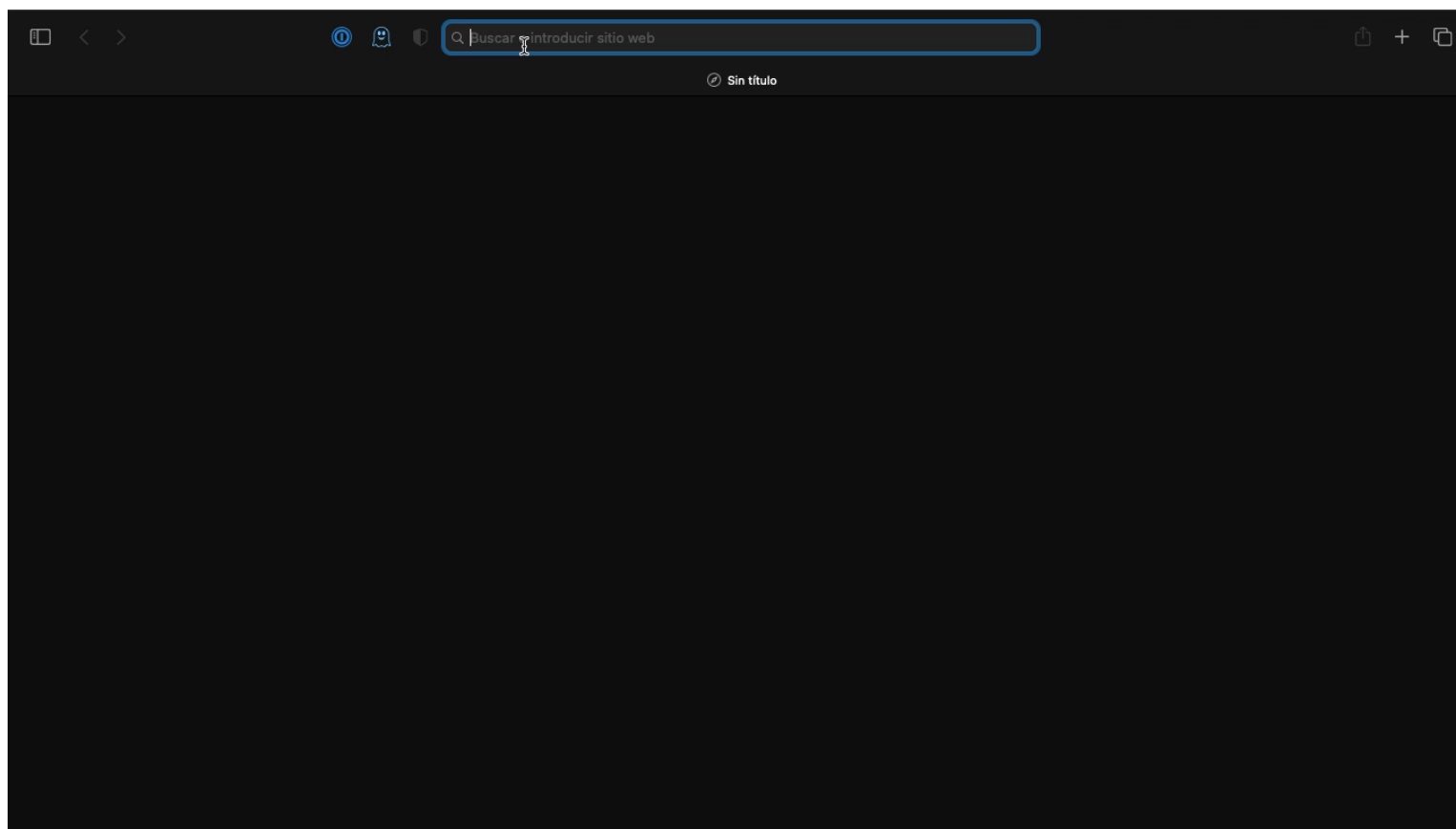


EU Space Programme:





# Galileo Performance Documentation



[www.gsc-europa.eu](http://www.gsc-europa.eu)

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# Open Service – Minimum Performance Levels



NAVIGATION  
MADE IN  
EUROPE

EUROPEAN GNSS (GALILEO)

OPEN SERVICE  
SERVICE DEFINITION  
DOCUMENT



Signal

- Ranging Accuracy (Worst Satellite and Constellation Average)
- Per Slot Healthy SIS Availability



Timing

- UTC Time and Frequency Dissemination Accuracy
- UTC Time Dissemination Availability
- UTC Time Determination Availability



Positioning

- Availability of PDOP
- Availability of position (Horizontal and Vertical at Worst and Average User Location)



Interoperability

- GST-GPS Time Offset Accuracy
- GST-TPS Time Offset Availability

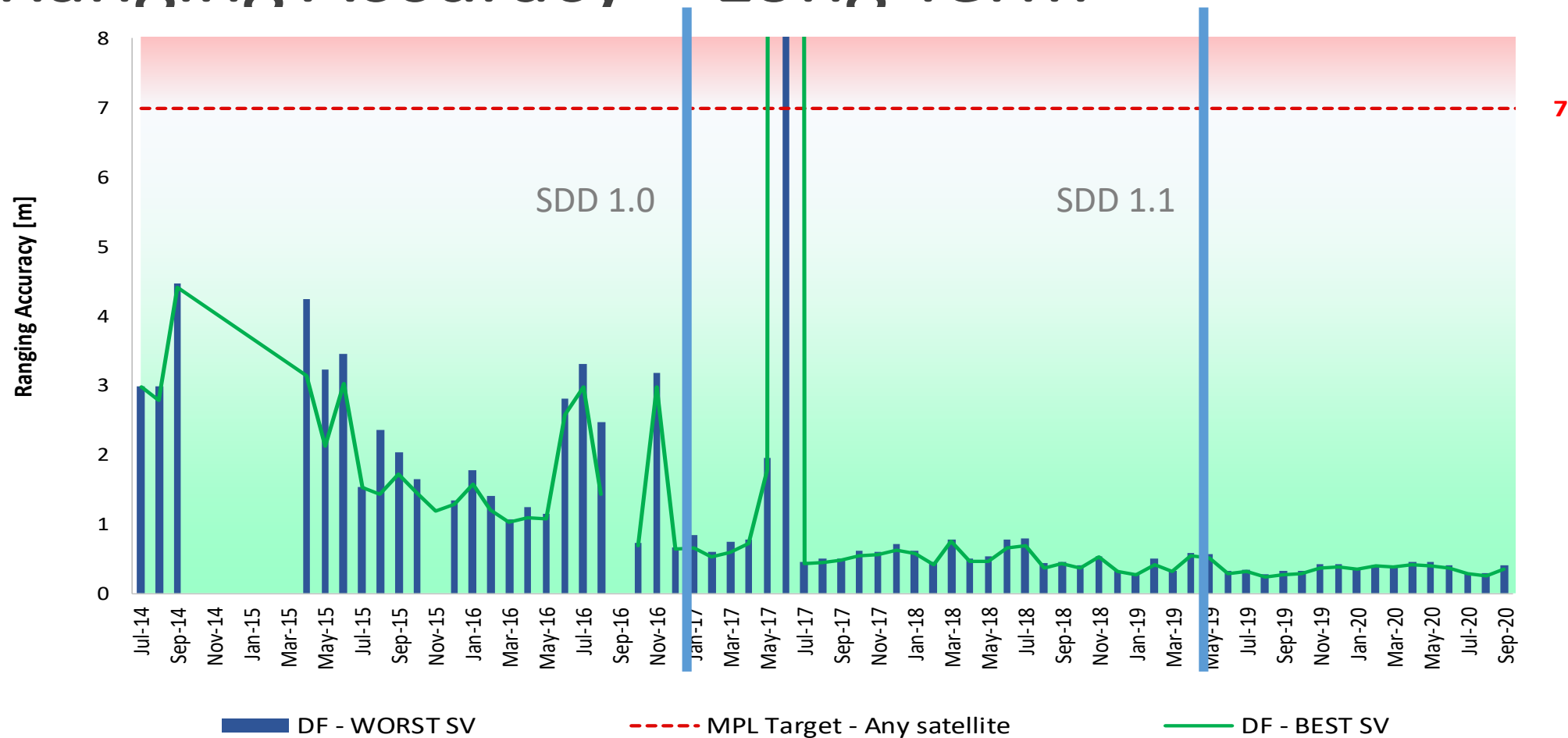


User Notifications

- Timeliness of NAGU publication (Planned and Unplanned)

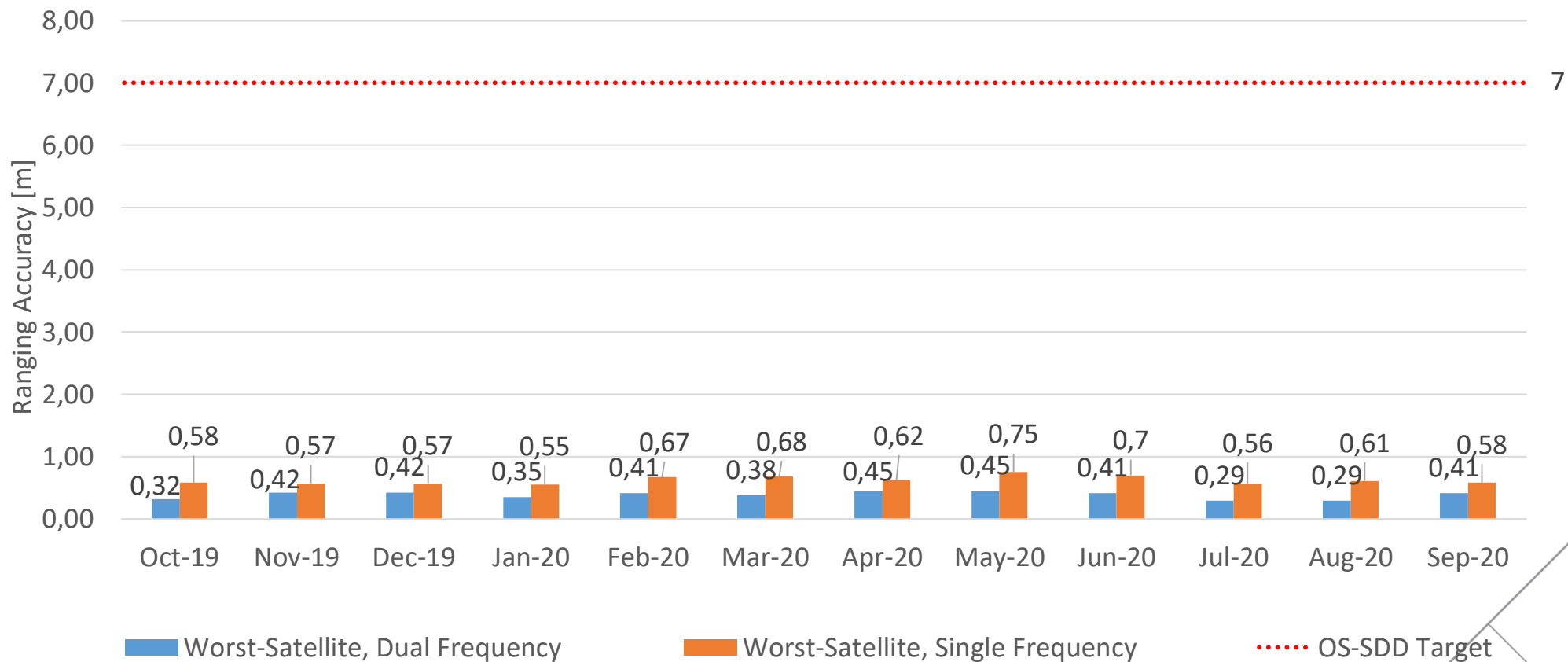


# Ranging Accuracy – Long Term



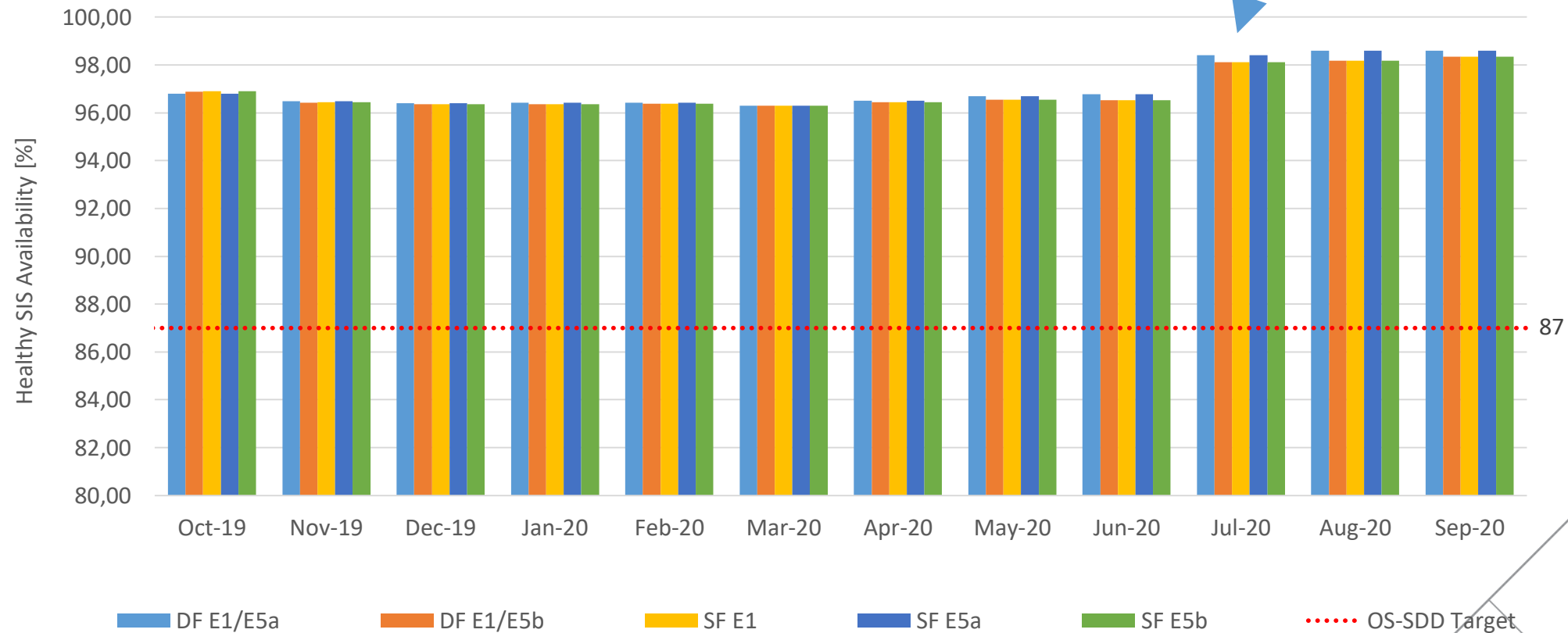


# Ranging Accuracy - Any Satellite



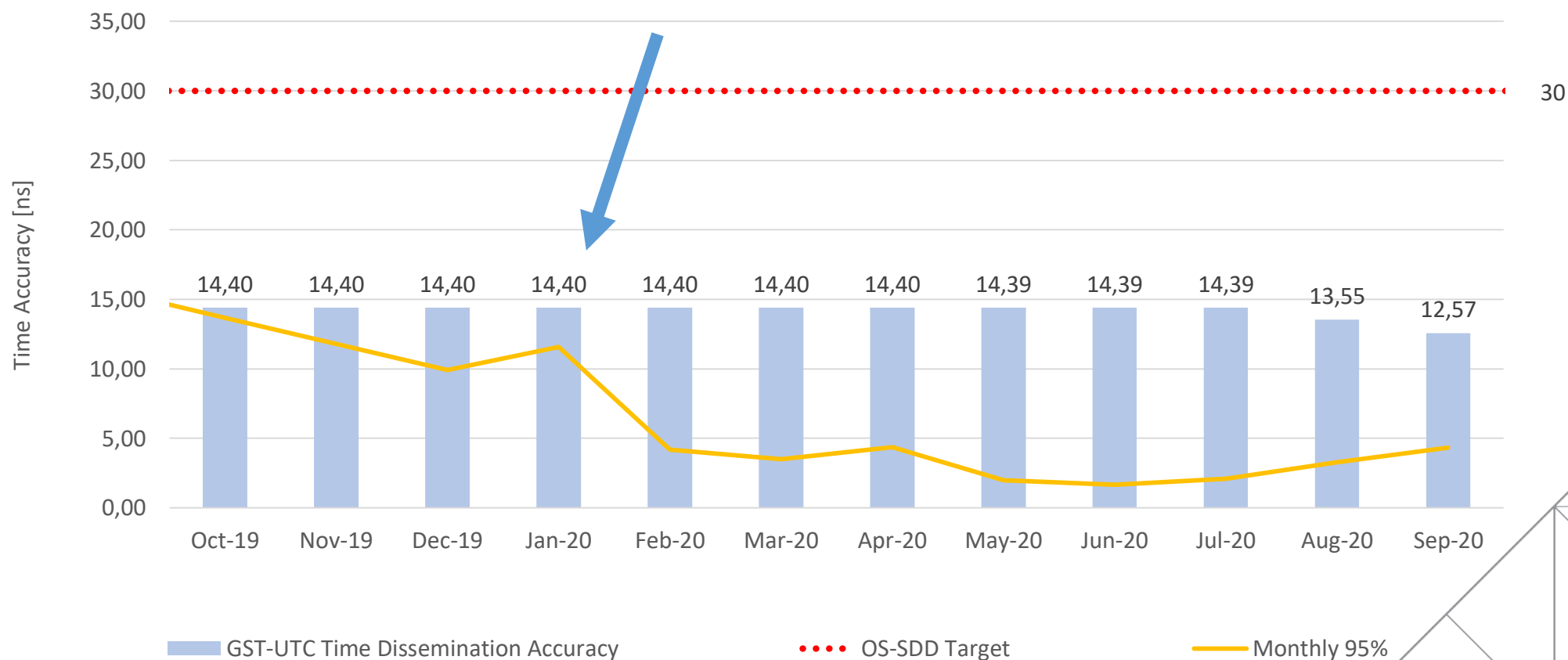


# Per Slot SiS Availability



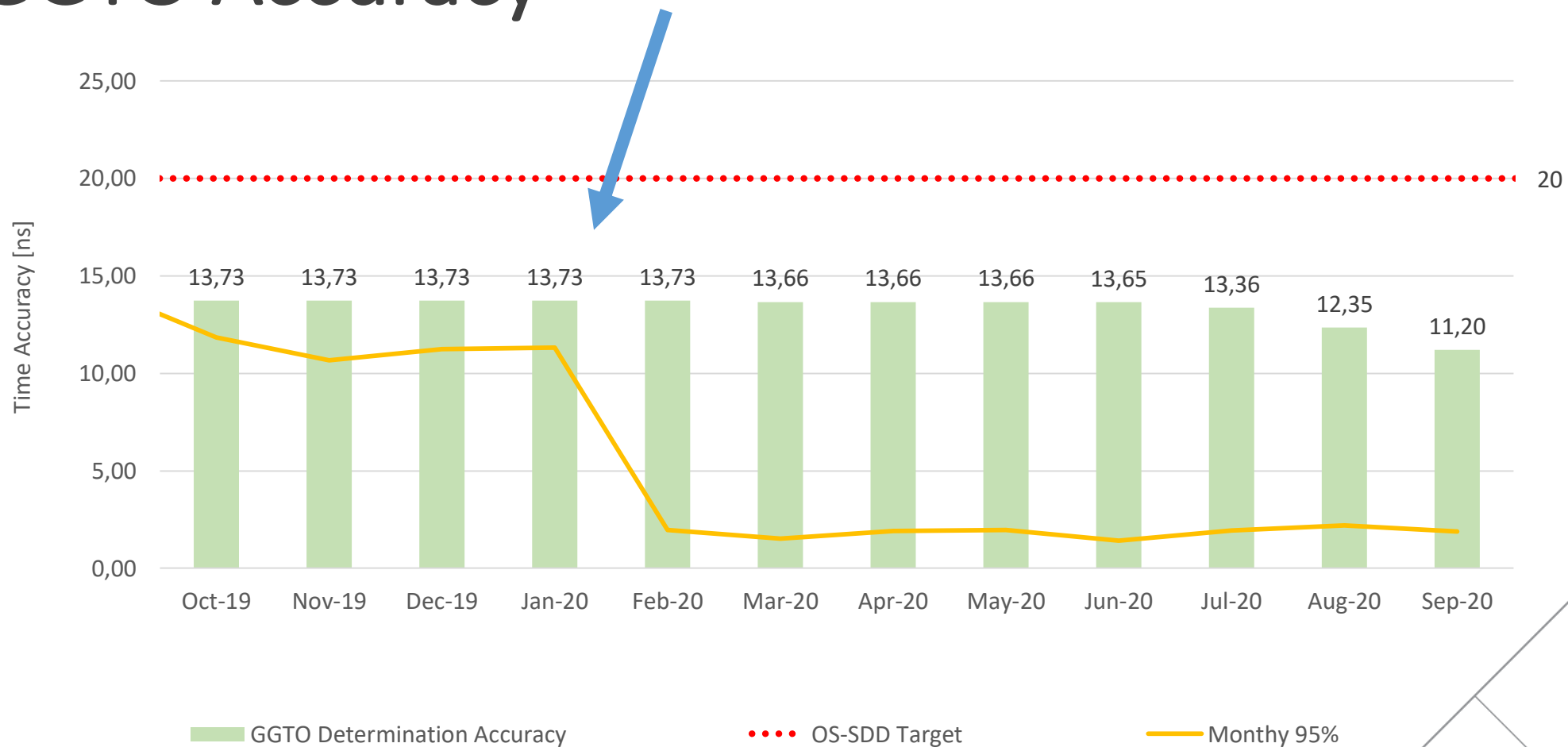


# UTC Time Dissemination Accuracy





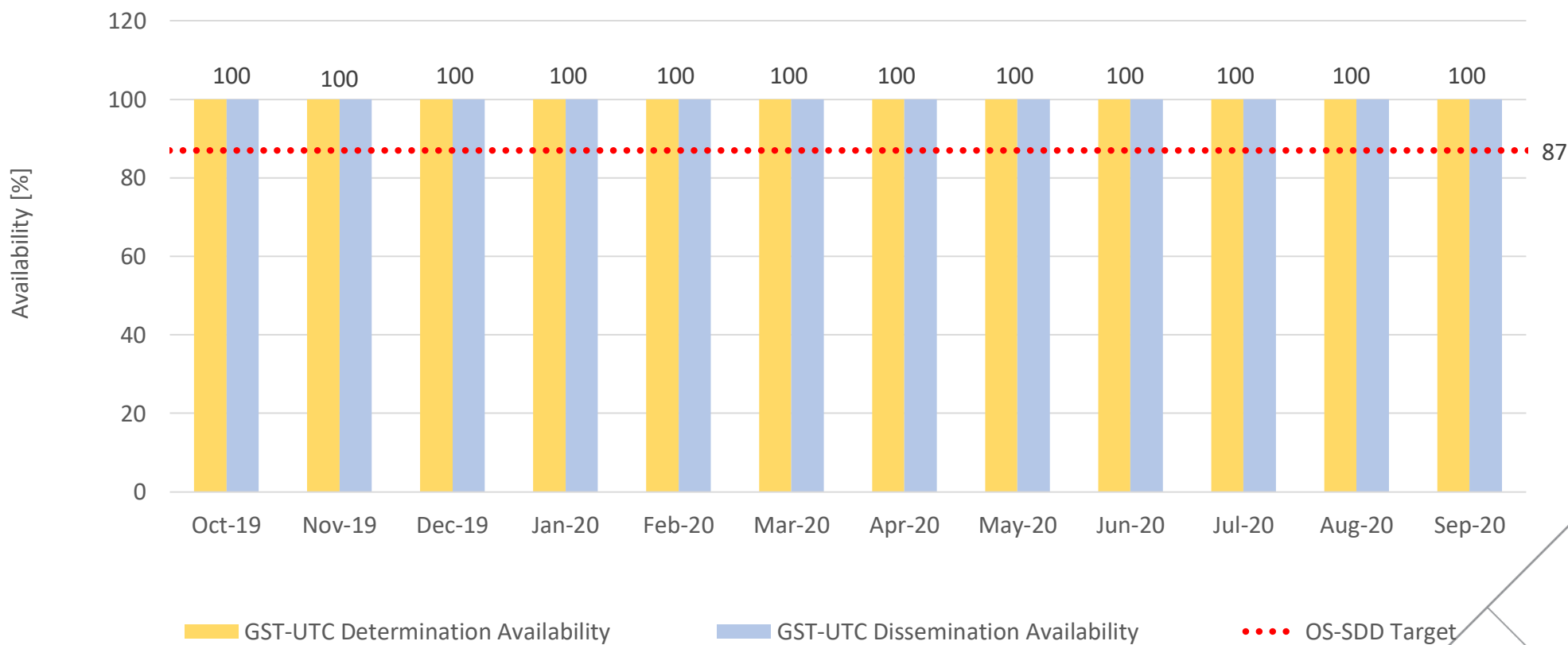
# GGTO Accuracy





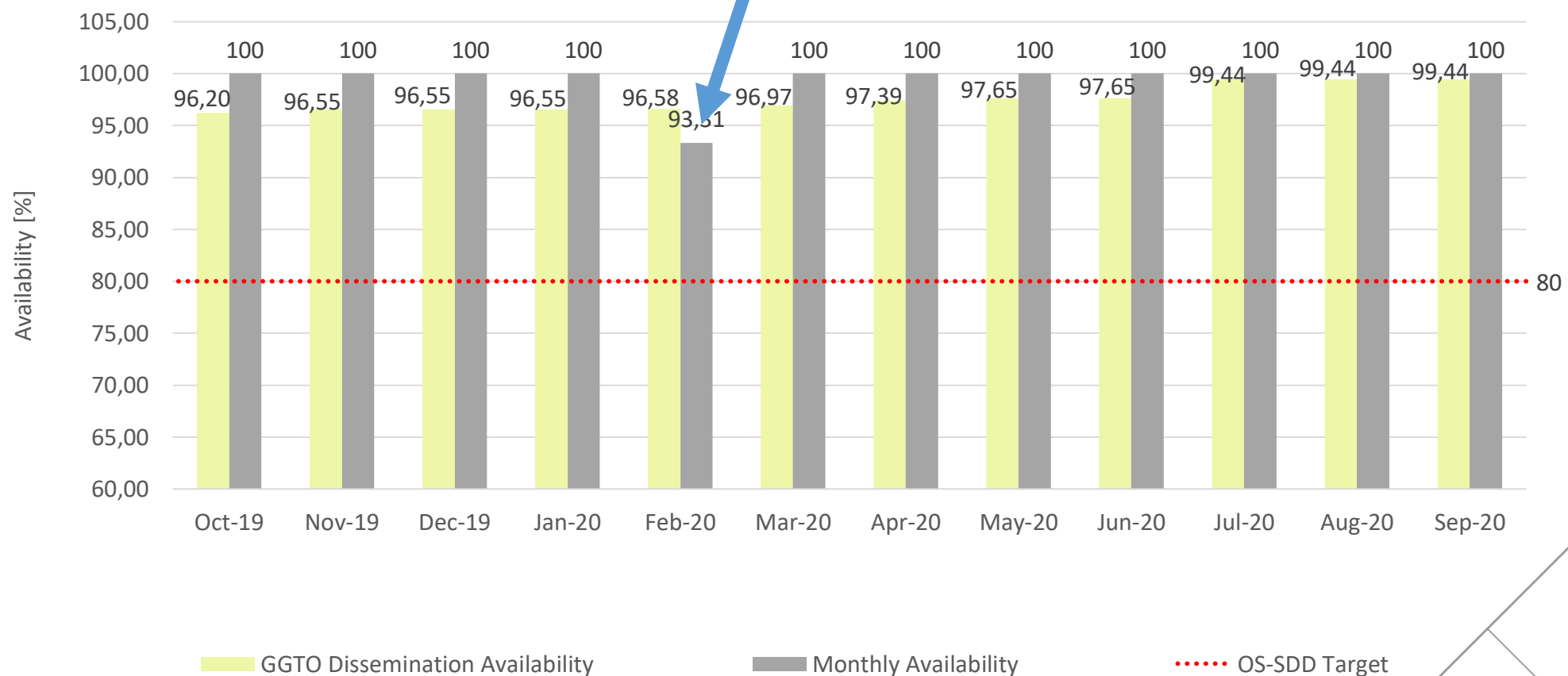


# Timing Availability



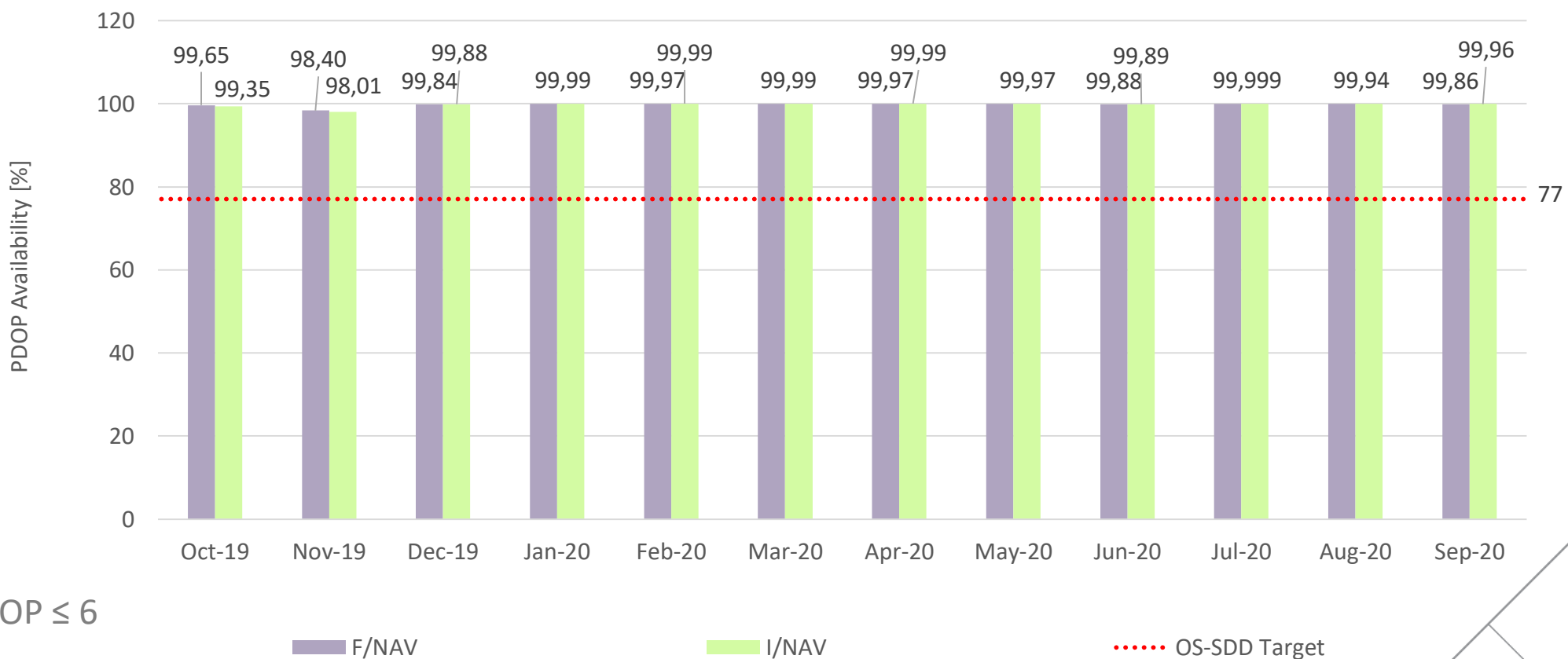


# GGTO Availability





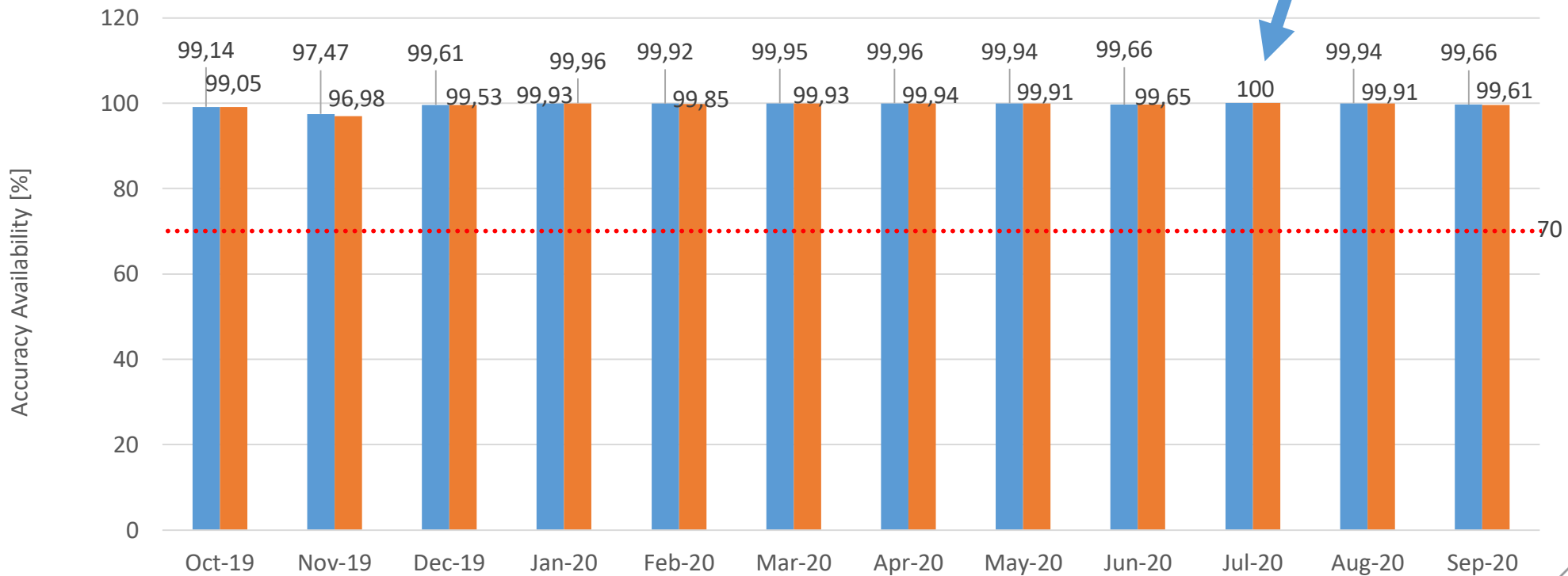
# Availability of PDOP at AUL



PDOP ≤ 6



# Availability of Position at WUL



HPE  $\leq$  7.5 m  
VPE  $\leq$  15 m

DF

SF

OS-SDD Target



# Search and Rescue – Minimum Performance Levels

NEW



Forward Link

- Service Availability
- MEOLUT Availability
- Detection Probability
- Location Probability, Single and Multi Burst
- Availability of Localization Accuracy, Single and Multi Burst
- Transponder Availability



Return Link

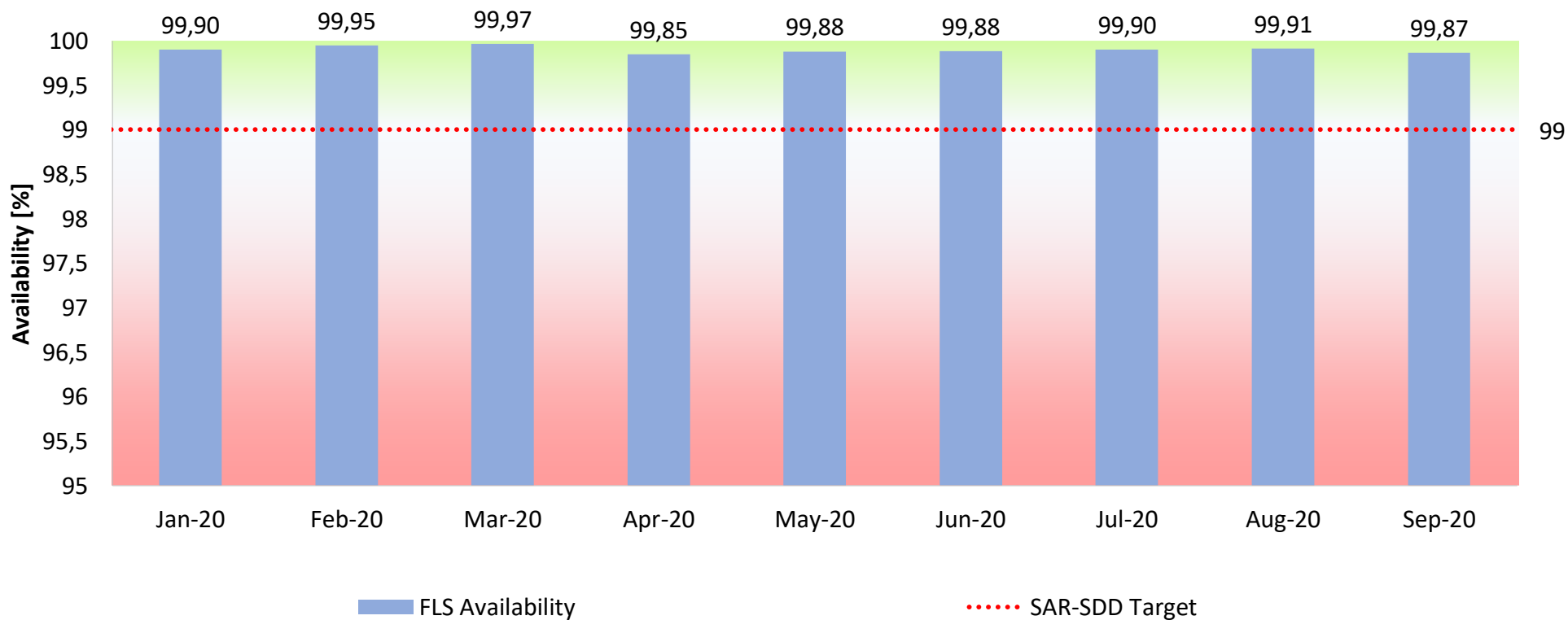
- Service Availability
- Message Delivery within 15 min
- Reception Probability



EUROPEAN GNSS (GALILEO) INITIAL SERVICES  
SAR/GALILEO  
SERVICE DEFINITION  
DOCUMENT

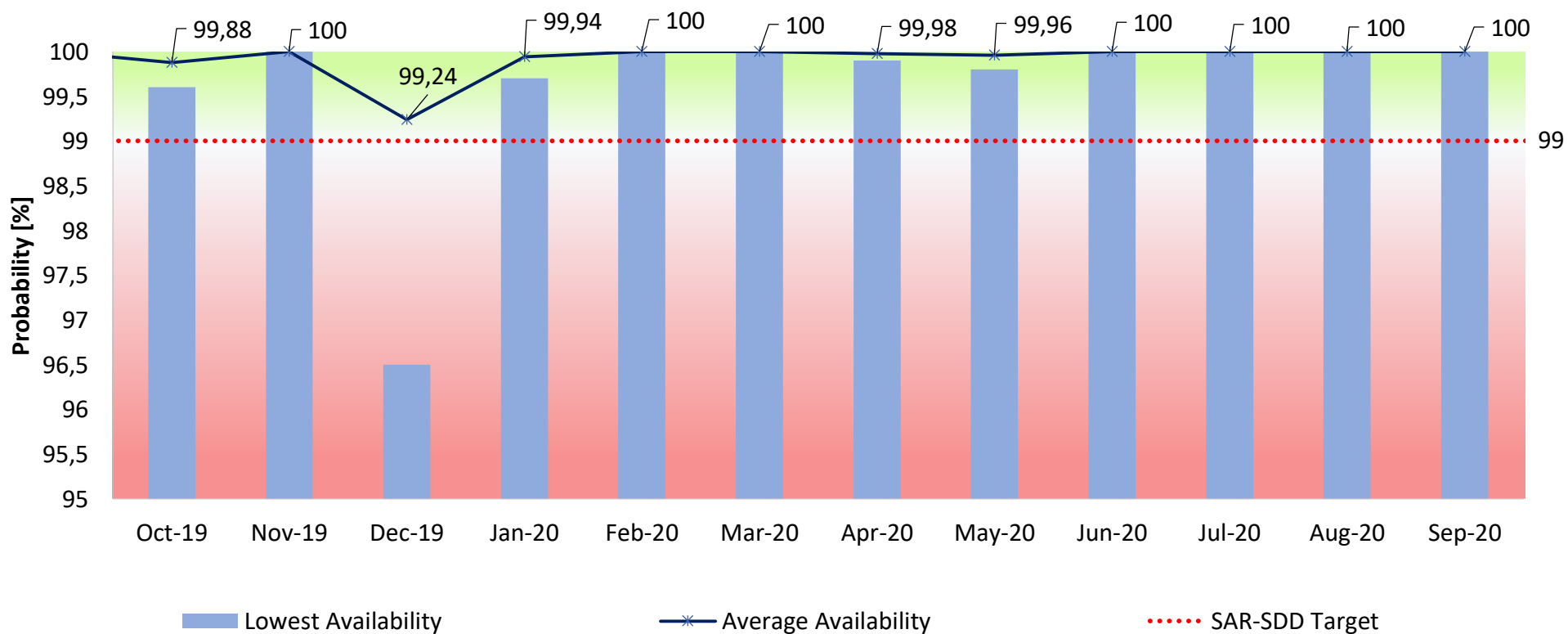


# FLS Availability



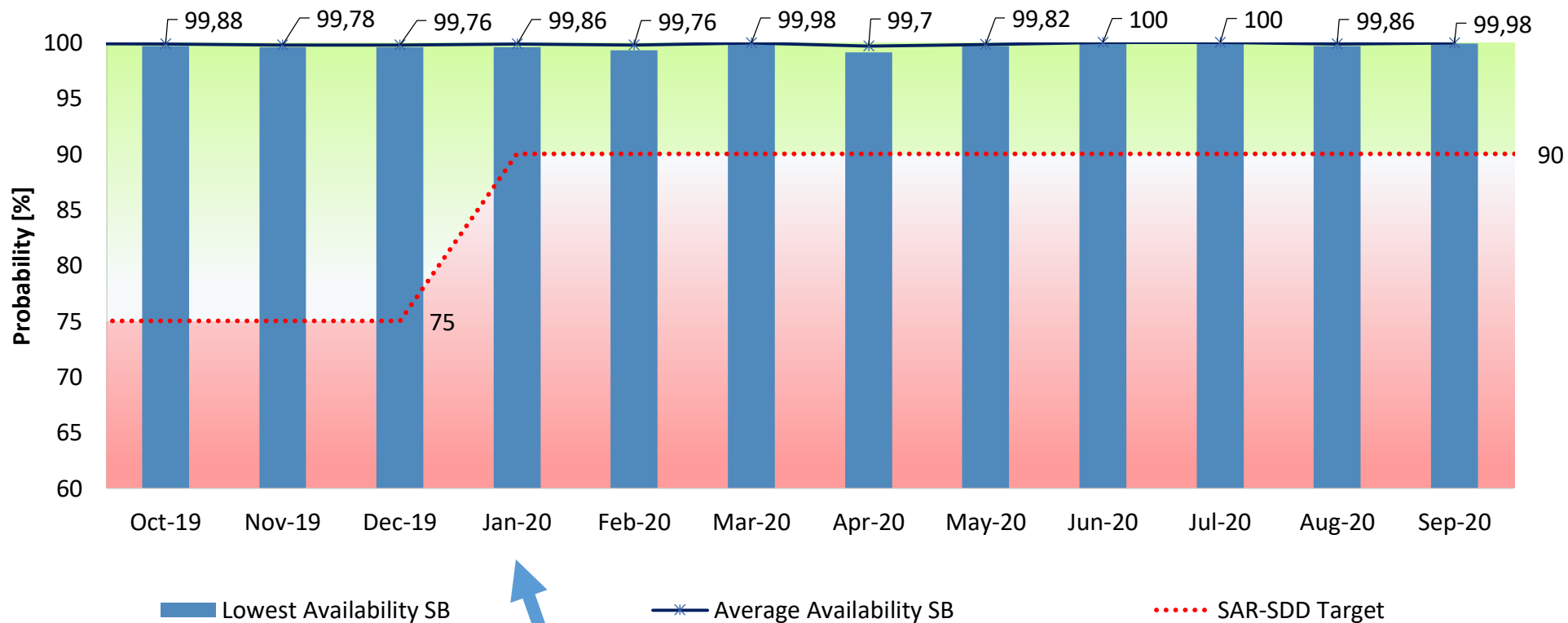


# Probability of Detection (Valid Message)





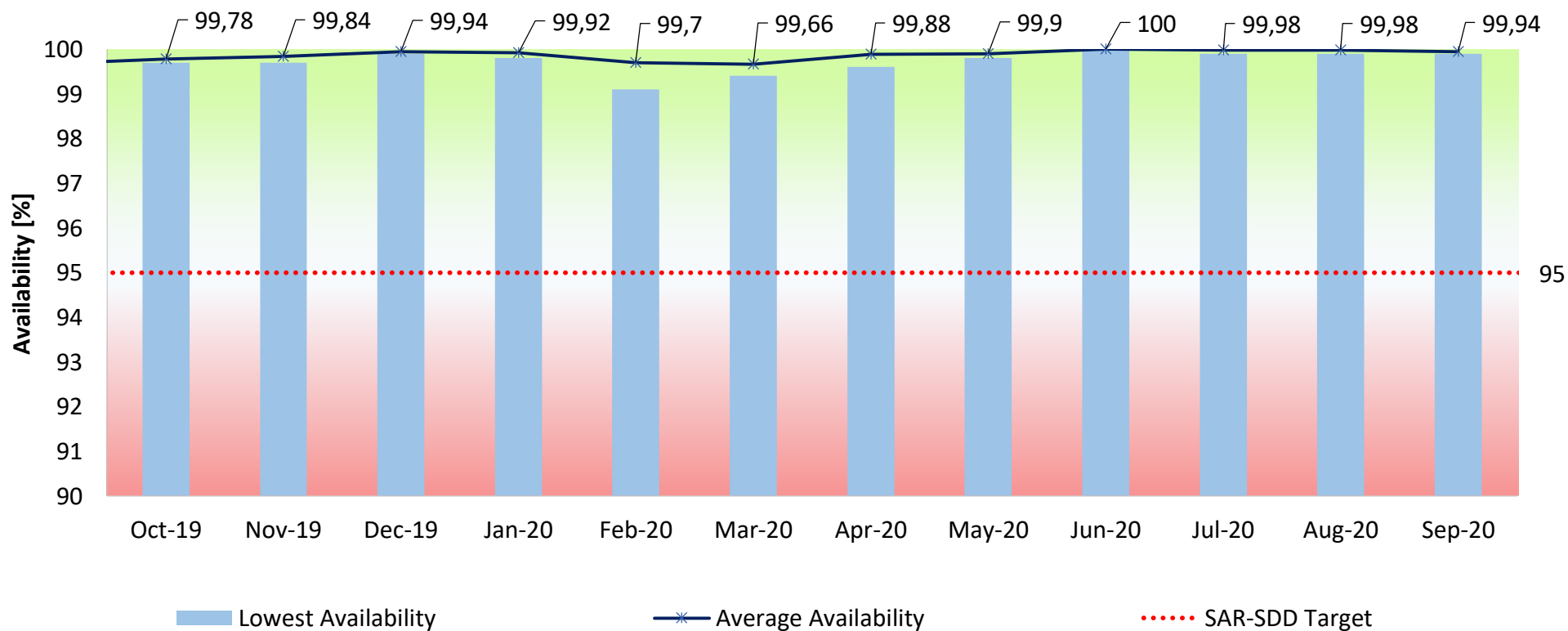
# Location Probability – Single Burst







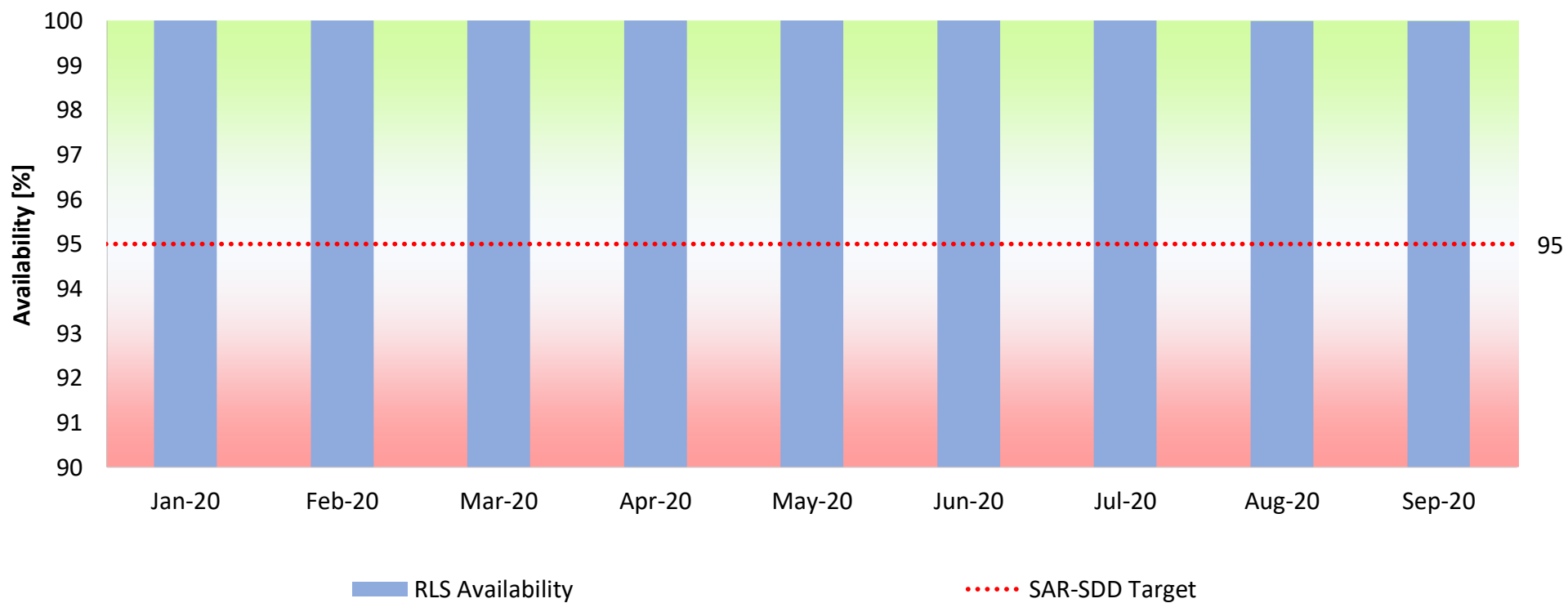
# Availability of Localization – Multi Burst



5 km

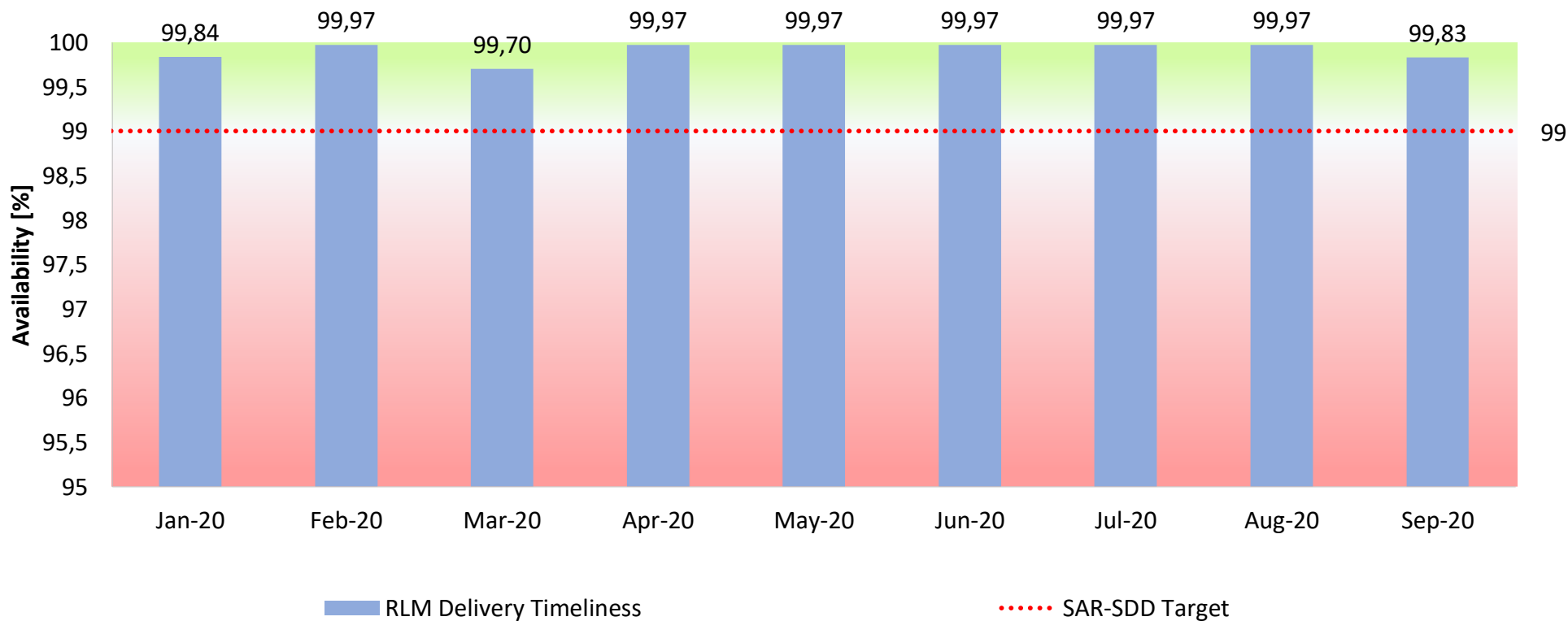


# RLS Availability



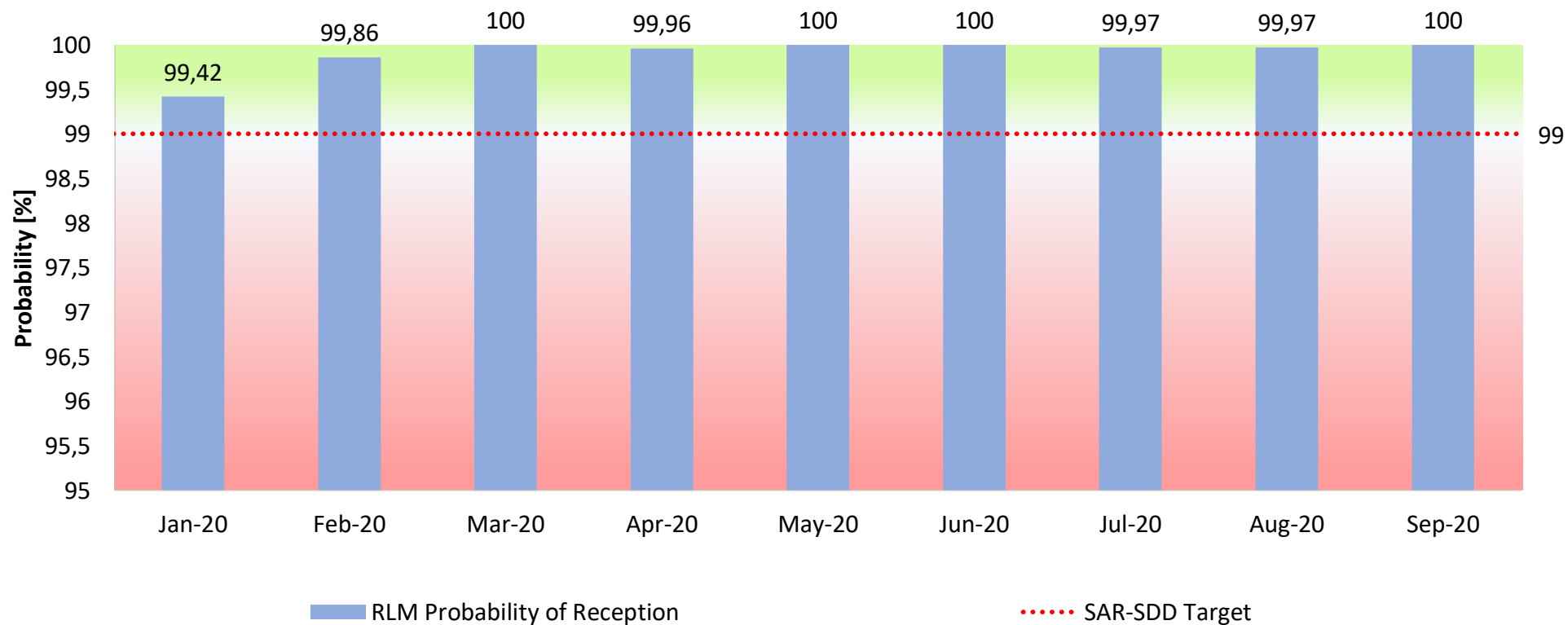


# RLM Availability of Latency within 15min





# RLM Probability of Reception





# Conclusions

- Find information on Galileo performance at the GSC web portal
- One year meeting all Galileo OS MPLs with margin
- New SAR SDD in 2020 – Meeting most MPLs with margin
  - All user-related
- **Galileo is improving – Preparing for FOC**

# Linking space to user needs



Organised by:



European  
Global Navigation  
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Agency



Under the auspices of:



EU Space Programme:



[www.euspaceweek.eu](http://www.euspaceweek.eu)  
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