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5G HEART

5G HEalth AquacultuRe and Transport validation trials

D7.6: 5G-HEART Showcases

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Abstract	This deliverable summarises the showcasing and demonstration efforts realised during the project. It also provides some preliminary information on the planned showcasing and demonstration efforts for the second half of 2022 when the final versions of the vertical use case trials are available. The deliverable is complementary material for the actual implementations of the 5G-HEART use case trials and demonstrations.
Keywords	Showcases, demonstrations, dissemination

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* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc.



EXECUTIVE SUMMARY

This deliverable summarises the showcasing and demonstration efforts realised during the project. The provided information includes the public events where the demonstrations have been held and shortly describes their content. Project demonstrations have been showcased in scientific conferences, such as the IEEE International Mediterranean Conference on Communications and Networking (MeditCom) 2021, IEEE Vehicular Networking Conference (VNC) 2021 and European Conference on Networks and Communications (EuCNC) 2022, as well as in trade shows, such as Mobile World Congress (MWC) 2022 and 5G Conference Southeastern Europe 2022. In addition to the physical events, the project has organised a series of webinars focusing on its trialling efforts in the healthcare, transport and aquaculture verticals.

All public demonstrations held before the project's final event have focused on partial implementation or development version of the targeted healthcare, transport and aquaculture vertical trials. The final versions of the demonstrations are planned to be shown in the 5G-HEART final event in the end of the project.



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ABBREVIATIONS

AR	Augmented Reality
KPI	Key Performance Indicator
VR	Virtual Reality



1 INTRODUCTION

This deliverable summarises the public showcasing and demonstration efforts realised during the project. The provided information includes the titles of the events where the demonstrations have been held and short descriptions of their content. All public demonstrations held before the project's final event have focused on partial implementation or development version of the targeted healthcare, transport and aquaculture vertical trials. Different versions of the demonstrations have also been tested and presented in a number of events internal to the project. The final versions of the demonstrations are planned to be shown in the 5G-HEART final event in the end of the project.

Due to the restrictions caused by the COVID-19 pandemic, the showcasing and demonstrations activities during the development of the project's vertical use case trials have been arranged in parallel with other public events such as scientific conferences and trade shows. As larger scale showcase events organised by the project were not a viable option, a series of 5G-HEART webinars was planned as an alternative online-based approach to promote the trialling activities in the project. The first vertical webinars introducing the use case trials and early implementations were held during 2020 and 2021. The second round of webinars presenting the final demonstrations is planned for the second half of 2022.



2 SHOWCASES AND DEMONSTRATIONS IN PUBLIC EVENTS

This chapter summarises the public showcases and demonstration held in conjunction with scientific conferences, trade shows and other public events, which have been arranged as physical events.

2.1 Scientific conferences

The IEEE International Mediterranean Conference on Communications and Networking (MeditCom) 2021: Tele-operated support over 4G/5G mobile communications

The demonstration focused on the transport vertical use case on remote driving (tele-operated) support, showing the design and implementation of the service over mobile communications with an actual vehicle. The description of the demonstration can be found from [1].

The IEEE Vehicular Networking Conference (VNC) 2021: Proactive low latency video encoding service based on 5G coverage

The demonstration focused on the healthcare use case on educational surgery, showing a proactive video encoding service able to adapt into prevailing network capacity based on 5G coverage. The solution enables fast video bitrate adaptation to network fluctuations, thus maintaining the required end-to-end delay and quality. The description of the demonstration can be found from [2].

The 2022 European Conference on Networks and Communications (EuCNC) & 6G Summit: Multiple demonstrations (live and video)

The demonstrations in the event covered all three target verticals of the project, showing implementations and example results from use cases focusing on paramedic support, critical health event, vital-sign patches and patch localisation, remote health monitoring, smart junctions, human tachograph, location based advertising, vehicle sourced high-definition mapping, environmental services and remote monitoring of water and fish quality. The details of the different use case trial demonstrations will be published as videos on the project website during the second half of 2022.

2.2 Trade shows

Mobile World Congress (MWC) 2022: Multiple demonstrations (live and video)

The demonstrations in the event focused on the healthcare and transport verticals, showing implementations and example results from use cases focusing on paramedic support, critical health event and human tachograph. The details of the healthcare use case trial demonstrations will be published as videos on the project website during the second half of 2022. The description of the transport demonstration can be found from [3].

5G Conference Southeastern Europe 2022: Network Key Performance Indicators (KPIs) monitoring

The demonstration focused on the network monitoring and KPI measurement enablers utilised in the aquaculture use case trials on remote monitoring of water and fish quality. The description of the demonstration can be found from [4].

12th Mobile Connected World - Smartverse: Pushing The Boundaries Of Connectivity! 12 July, 2022

The 5G HEART network monitoring enablers and techniques along with key results, were presented both in a speech and through a digital booth. The content relates to the aquaculture use case trials on remote monitoring of water and fish quality. The description of the demonstration can be found from [4]



2.3 Other public events

The Converging Networks Laboratory (CNL) Demonstration Competition 2020: Mobile 360° streaming for health care

The demonstration focused on showcasing the benefits of 360° live video streaming in mobile healthcare and medical scenarios using Augmented and Virtual Reality (AR/VR) technologies.

Dutch Technology Festival 2022: Remote ultrasound

The demonstrations focused on different aspects of the remote ultrasound use case trial implementations.



3 PUBLIC PROJECT WEBINARS

This chapter summarises the public project webinars organised to present the details of the vertical use case trials and demonstrations during different phases of their development.

5G-HEART Webinar #1: Healthcare vertical trials

The first 5G-HEART webinar focused on the healthcare vertical trials and was held on 12 October 2020. The webinar presented the trial plans and showed intermediate demonstration implementations from use cases focusing on paramedic support and remote ultrasound examination. More information on the event can be found from [5].

5G-HEART Webinar #2: Transport vertical trials

The second 5G-HEART webinar focused on the transport vertical trials and was held on 4 December 2020. The webinar presented the trial plans and showed intermediate demonstration implementations from use cases focusing on smart junctions, remote driving and human tachograph. More information on the event can be found from [6].

5G-HEART Webinar #3: Aquaculture vertical trials

The third 5G-HEART webinar focused on the aquaculture vertical trials and was held on 7 May 2021. The webinar presented the trial plans and showed intermediate demonstration implementations from use cases focusing on remote monitoring of water and fish quality. More information on the event can be found from [7].



4 CONCLUSION

This deliverable provided a short summary of the public showcasing and demonstration events where 5G-HEART vertical use case trial implementations have been presented. Project demonstrations have been showcased in scientific conferences, such as MeditCom 2021, VNC 2021 and EuCNC 2022, as well as in trade shows, such as MWC 2022 and 5G Conference Southeastern Europe 2022. In addition to the physical events, the project has organised a series of webinars focusing on its trialling efforts in the healthcare, transport and aquaculture verticals.

In addition to the activities summarised in this deliverable, the project plans to showcase its final use case trial and demonstration implementations in several project events during the second half of 2022. Second round of dedicated webinars are planned for each of the project's target verticals. In addition, the 5G-HEART final event planned to be held in the end of the project will include all the project use cases and demonstration implementations in their final format.



REFERENCES

- [1] Kakkavas, G., Diamanti, M., Gabriel, M., Lahoud, C., Phanindra Akula, S. V. N., Karyotis, V., Moessner, K., Papavassiliou, S. (2021). Demo proposal: Tele-operated support over 4G/5G mobile communications. In Proceedings: IEEE International Mediterranean Conference on Communications and Networking (MeditCom), 7-10 September 2021, Athens (online). DOI: 10.1109/MeditCom49071.2021.9647643
- [2] Uitto, M., Heikkinen, A. (2021). Demo: Proactive low latency video encoding service based on 5G coverage. In Proceedings: IEEE Vehicular Networking Conference (VNC), 10-12 November 2021 (online). DOI: 10.1109/VNC52810.2021.9644660
- [3] 5G HEART Human tachograph demonstration video. (2021).
<https://www.youtube.com/watch?v=c7wDDPcG3J4>
- [4] 5G HEART ACTA KPI measurements. (2022).
<https://www.youtube.com/watch?v=3Fa4iAgQXOg&t=6s>
- [5] 5G-HEART webinar series – Webinar #1 – Healthcare vertical trials. (2020).
<https://5gheart.org/5g-heart-webinar-series-webinar-1-healthcare-vertical-trials-videos-and-presentation-files/>
- [6] 5G-HEART webinar series – Webinar #2 – Transport vertical trials. (2020).
<https://5gheart.org/5g-heart-webinar-series-webinar-2-transport-vertical-trials-videos-and-presentation-files/>
- [7] 5G-HEART webinar series – Webinar #3 – Aquaculture vertical trials. (2021).
<https://5gheart.org/5g-heart-webinar-series-3-aquaculture-vertical-trials-presentation/>

