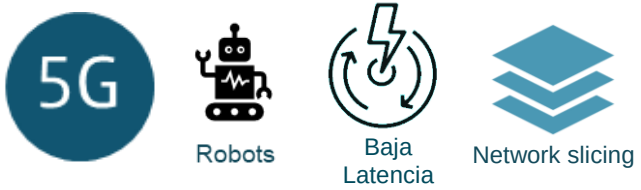
5G Slicing for critical applications



Objetive: Application of state-of-the-art end-to-end NW slicing technology and service robotics to the security of physical enclosures

Description: Deployment of a private 5G SA network with end-to-end network slicing capabilities, flexible and adaptable to different types of services. This network can guarantee very low latency and high bandwidth in the slice dedicated to critical services, even in conditions of network saturation. This network has been deployed in the campus of the University of Vigo. To demonstrate the possibilities of this technology, a demonstrator has been developed in which Boston Dynamics' Spot robot, connected by 5G to the critical services slice, is remotely controlled from the control station deployed on the campus for this project. Spot in turn sends several real-time video streams to both the control station and a tablet that is used by the security services. Two scenarios are presented: augmented surveillance on regular rounds, in which Spot complements the guard in routine inspection tasks, and second scenario for unexpected emergency situations, in which Spot is sent to perform a pre-inspection avoiding unnecessary risk to security personnel. The robot is equipped with several cameras, infrared for night vision and heat mapping, 360º and PTZ for zooming, all of which are managed from the control station. Securitas Seguridad has collaborated with Telefonica for the demonstrator.

The private 5G SA network deployed to carry out the project consisted of:

- Core 5G SA cloud-native with e2e slicing capabilities and NSO orchestrator, both provided by Cisco.
- 5G SA radio with e2e slicing capabilities, deployed by ZTE, both for outdoor and indoor coverage, in 3.5Ghz band.
- Spot and telecontrol platform and management of the flows sent by the sensors, provided by Alisys, Boston Dynamics' partner in Spain.

In addition, the University of Vigo has been involved as a research center in 5G networks and active collaborator in the design, deployment and validation of the demonstrator.

Press release

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