

7 Challenges of the STARS “HACK & MATCH” EVENT #2

Topic: Big Data for Railway Processes, Products and Services

Date: 25-27 January 2023

Challenge #1 - CAF Rail Digital Services (Spain)

CAF Digital Services is a cloud native company offering digital products and services to railway operators and maintainers: real time information, condition based maintenance, predictive maintenance, wayside inspection systems, with computer vision, to monitor wheels, bogies, pantographs and carbody. CAF collaborate closely with operators to provide them with advanced analytics related with energy, passengers, drivers, safety,

For this Hack&Match #2, CAF propose to work on "***Predictive maintenance of onboard systems (brake, traction, compressors, batteries, doors, hvac, wheels, ...)***"

Challenge #2 – COMSA (Spain)

COMSA Corporación is a leader in infrastructure & engineering. This company works on the development of advanced, high-tech infrastructures in which innovation plays a fundamental role as an motor for growth and the generation of sustainable solutions.

For this Hack&Match #2, COMSA propose to work on "***Intrusion detection in railway. Maintenance of railways infrastructure.***"

Challenge #3 – Rubbergreen (France)

Rubbergreen is one of the leaders of recycling rubber products. Main applications are railway infrastructure (Vibration mitigation and protection mats), building infrastructure (same products) and roofing (support for Industrial machinery like HVAC or Solar panels).

For this Hack&Match #2, COMSA propose to work on "***Easy and quick way to characterize its mats with the different standards and norms used in railway industry***"

Challenge #4 - ICON Multimedia (Spain)

ICON Multimedia is a company specialized in the development and integration of Digital Signage software solutions and passenger information display systems for Smart Cities and Smart Stations.

For this Hack&Match #2, ICON Multimedia proposes to work on "***a system which processes the data from the railway circuits of a country in real time, calculating the position of each train and its times***"



Challenge #5 - ELFI Electronics (Italy)

Elfi Srl is a laboratory for the design and production of electronic equipment for the railway and tramway sector. This cutting-edge company produces highly specialized technology with industrial quality, maintaining in its processes the care of an artisan workshop: focused on detail and careful to find innovative solutions customized to the needs of its customers.

For this Hack&Match #2, ELFI Electronics proposes to work on the thematic "**Big data for maintenance of infrastructures**"

Challenge #6 - Revenga Smart Solutions (Spain)

Revenga is a manufacturing and integration company focused on Smart Mobility projects. Mainly solution-integrator and proprietary manufacturer and SW developer: Level Crossing, SCADA, Point heaters, ticketing... Spanish based company with international presence.

For this Hack&Match #2, Revenga wants to know "**big data capabilities for further upgrades of our Level Crossing solutions, called RAILROX. This system can interface with third party elements and can work automatically. Big data could be a real possibility for improvement and up-to-date.**"

Challenge #7 - Te.Si.Fer (Italy)

Te.Si.Fer. Srl specialises in the design of railway signalling and telecommunication plants also for subways and trams. It has experience in design and installation both within Italy and worldwide. It continues to expand traditional skills as well as acquiring experience in testing and commissioning of interlocking and ATP and ATC technologies. It has developed software tools for simulation and project development together with software for intelligent management of BIM documentation and applications in the field of railway technology.

For this Hack&Match #2, Te.Si.Fer proposes to work on this thematic : "**Developers of SmartTrack to help the design phase of signaling drawing for ETCS and ERTMS engineering design starting from the survey phase. As dated experts in many railway engineering phase we design signaling systems for the more advanced technology of the most important company in the world. Due to the importance of the data received from the surveys along all the engineering phase we want to integrate the Blockchain technology. In this way, thanks to the Blockchain, we will be able to provide traceability of the data throughout all the workflow, and we will assure the clients that their confidential data will remain unchanged. Once the data is produced and secured through a blockchain every new data generated by a survey will be unique and independent, while maintaining the relationship between them along all the lifecycle**"

