Shift2Rail's '4SECURail' completes initial work on projects towards tightening cyber security and improving signalling systems across European railways

Barcelona, 17 February 2021 - The two Shift2Rail's 4SECURail workstreams have reached their mid-term objectives for the design of a Computer Security Incident Response Team (CSIRT) for joint EU-Rail cyber security, and a Formal Methods Demonstrator for improved Railway Signalling Systems.

4SECURail, a two-year Shift2Rail initiative aimed at delivering a co-designed process and tools for information sharing and cooperation for rail cyber security at European level and to support better interoperability of signalling systems for railway security, safety and efficiency, has announced that it has achieved its mid-term objectives for the design of a Computer Security Incident Response Team (CSIRT) for joint EU-Rail cyber security, and a Formal Methods Demonstrator for improved Railway Signalling Systems.

Launched in Barcelona in January 2020, the 4SECURail project is being carried out by a multi-national consortium of seven European specialist partners from Spain, Italy, The Netherlands, and France who are participating in the EU's Shift2Rail Programme funded by the Horizon 2020 research funding programme. The members making up the consortium are Ardanuy Ingeniería S.A., Consiglio Nazionale delle Ricerche, FIT Consulting s.r.l., Hit Rail B.V., SIRTI S.p.A., TREE Technology S.A., and UIC.

Further involvement of a wide range of organisations and companies was achieved by the constitution of an advisory board (AB), set up at the beginning of the project. This Board includes experts from a number of companies and organisations, including Infrabel, Danmarks Tekniske Universitetet, ProB, Prover and University of Twente for the Formal Methods workstream and DG Move Railsec initiative, UNIFE, and the CSIRT's expert companies Expleo from France and Cervello from Israel for the CSIRT workstream.

The advisory board, along with other important stakeholders in the European Railway environment, played an important role during a number of technical workshops that took

place in June 2020. Initially intended to take place in Brussels, the meetings were held as online workshops due to the prevailing Covid-19 conditions.

The project team working on the development of a formal methods demonstrator for improving the railway signalling system has already released the first version of the demonstrator and has defined the use case where the demonstrator will be tested: The handover of a train between two Radio Block Centres. The team is now working on the final release of the demonstrator and performing a cost-benefit analysis of the utilisation of formal methods in the railway signalling industry.

The members of the consortium working on the design of a European Railway CSIRT (Computer Security Incident Response Team) collaborative platform have finished the design of the model and are now building the collaborative platform prototype. This platform will be useful in coordinating the Cyber Security response actions of individual railway security teams.

Albert Ferrer-Bonsoms from Ardanuy and 4SECURail's Project Manager, said "We are very proud that we have been able to keep this project on track during the difficulties posed by Covid-19 restrictions and specially the loss of Frank Wilson, a key member of the CSIRT Workstream on behalf of Hit Rail, who passed away on April 12th, 2020 due to the COVID-19 outbreak. He will be forever in our thoughts. It is testament to the strong sense of collaboration and cooperation of all partners towards a joint target which will be beneficial to the rail industry and its security and safety."

All public project deliverables which have already been completed can be downloaded on the project website: www.4SECURail.eu.

Shift2Rail is a European rail initiative that seeks to encourage focused Research and Innovation (R&I) aimed at integrating new and advanced technologies through its Horizon 2020 funding and aimed at completing the Single European Railway Area (SERA). The 4SECURail project, started in December 2019 and officially launched in January 2020, will contribute to ensuring that interoperability and safety for signalling systems function properly, apart from providing measures to deploy collaborative Cyber Security support across Europe.

About Ardanuy Ingeniería, S.A.

Ardanuy Ingeniería S.A. was founded in 1992. The Company is a Spanish Corporation with offices in Spain (headquarters in Madrid and offices in Barcelona, Valencia, Seville and the Canary Islands) and branches in Lithuania, India, Colombia, Peru and Algeria, developing activities in more than 60 countries in all five continents. Ardanuy is an engineering consulting firm specialised in studies, projects, works management, safety engineering (ISA), operation / maintenance studies; and technical guidance for railways (high-speed, conventional, freights, metros, trams, cable cars), including all systems and infrastructures: track, signalling, traction power systems, depots, stations, tunnels, etc.
www.ardanuy.com

About Consiglio Nazionale delle Ricerche

The Italian National Research Council (CNR) is the main public research organisation of Italy, carrying out, promoting and transferring multidisciplinary research through a network of more than one hundred institutes all over the country. The Formal Methods & Tools lab that is part of the Institute of Information Science and Technologies of the CNR has longstanding experience in the development and application of formal notations, methods and software support tools for the specification, design and verification of railway systems and other complex systems.
http://www.cnr.it, https://www.isti.cnr.it/en/, https://fmt.isti.cnr.it

About FIT Consulting s.r.l.

FIT Consulting srl (FIT) is an Italian independent SME, founded in 1997. Dynamic and professional, over time FIT has succeeded in building a network of over 300 partners in Europe, Asia and the USA, becoming members of the main European thematic networks on mobility of people and goods. Its expertise is based on more than twenty years of experience in fund-raising and technical and scientific assistance for the development of innovative projects and services.
www.fitconsulting.it

About Hit Rail B.V.

Hit Rail B.V. is a private Dutch company created in 1990 and owned by European railway companies. Its purpose is to provide secure telecommunications and IT services to the European Railways community, connecting more than 50 railway companies from 23 countries through its secure IP-based Hermes virtual private network (VPN).
For more information please visit http://www.hitrail.com/ or send an email to info@hitrail.com.

About SIRTI S.p.A.

SIRTI is a leading Italian technology company providing solutions for engineering and network communications. Established in 1921, SIRTI develops innovative solutions for various markets, including railway transportation systems, telecommunications, energy, and all those which require a network infrastructure. SIRTI operates globally, employing around 4,000 employees worldwide.
www.sirti.it

About TREE Technology S.A.

TREE Technology SA (TREE) is a Spanish R&D-performing SME providing information and communication technology solutions based on Big Data and Artificial Intelligence for different sectors and markets (e.g., healthcare, security, banking and insurance, culture, energy, space, industry, and transport). TREE works within an open innovation model to provide their customers with advanced ICT solutions, helping them to optimise their processes and improve their business. R&D activities, in particular cooperative initiatives, are key to the company business model in assessing the maturity of emerging technologies, gathering new and differential knowledge, and identifying strategic partners to create new business opportunities.
www.treetk.com

About UIC (International Union of Railways)

UIC is the worldwide organisation for international cooperation among railways and the promotion of rail transport at a global level. Founded in 1922, it currently gathers 200 members on all five continents, among them railways, rail operators, infrastructure managers and others. The mission of the association is to promote rail transport at world level with the objective of optimally meeting current and future challenges of mobility and sustainable development.
www.uic.org

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