

BANGALORE TECHNOLOGY CENTER (D&IS)

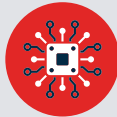
Tech Forum - Quarterly Newsletter

• January 2022 •

ALSTOM
• mobility by nature •



Technology
Innovation



Embedded
Software



Cyber
Security



Application
Software



Verification
& Validation



Program
Management

FOREWORD



"Tech Forum is formed in Bangalore with a vision to realize BLR TC as a key Signalling R&D pillar for global D&IS. In fact, forums at other DCs are working on similar lines. At the D&IS level, the technology outlook is quite encouraging. You might have read AiM 2025, R&D budget is getting almost doubled (600M€) by 2025."

- **Christophe DE-MEYER**



"Technology Forum is a good platform to **join**. It will enable your career fulfilment, provide innovative ideas as well as opportunities to collaborate & contribute to key technology areas. Successful conduct of tech day event on 12 Oct'21 has provided further confidence to drive BLR Tech Forum strategies and objectives effectively."

- **Thameem KAMALDEEN**

EDITORIAL



"Tech Forum is established with 6 Focus areas to enable the implementation of BLR TC objectives. Domain & Technology competence, WCE, and Innovation culture are some of the key focus areas started with. The plan is to publish a quarterly newsletter for providing status updates, success stories, and information on upcoming events. You can know more about the forum **here**."

- **Dinesh VIJAY**

PRIORITY AREAS



Setting up
focus groups to
drive initiatives



Innovation and
competency building as
round the year activities



Agile and
Shift left Way
of Working



Software Test
Automation
platform

HIGHLIGHTS

GUIDEWAY FAULT ASSISTANCE

Fault assistance detection using digital technologies

Business impact

- Metro Operators: Improves QoS and Reduces Downtime
- Integration with Signaling Health-Hub solution
- Beneficial for Signaling and Infrastructure services business

Status



First demo by 31 March'22, a proposal approved & funded by Innovation Kiosk

Reach out to **Rahul** for more details

V&V HARMONIZATION

Common WoW for V&V activities across programs executed from Bangalore

Business impact

- Ability to scale and better handle peak workloads
- Cross deployments to increase resource skills & build expertise

Status



Deployed on SW Test & Verification activities, be extended to SwRT/SyRT. **See dashboards here.**

Reach out to **Vinayak** for more details

TCMS KALMAN FILTER

Onboard Application Software - Neutral section detection, Multi-Sensor Fusion (GPS, Odo, V.I..)

Business impact

- Avoids dependency on – Balise, TCMS level balise Antenna, Highprecision meters, and 3rd party data for Rolling Stock business
- To start with Mumbai and Perth metro application, Maximum cost avoidance of 1.5 M€ per project

Status



PoC demonstrated with Lucknow metro & eLoco data, Go for plementation.

Reach out to **Ganesan** for more details

Tech Day 12 Oct 2021 Klaxon quiz Winners



Sandeep CHAWLA



Shantanu DESHMUKH



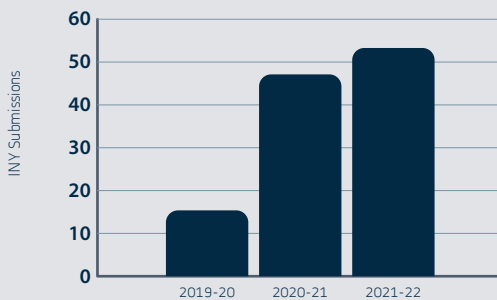
Olivier ROLAND

Innovation Submissions

I Nove You (INY): 53

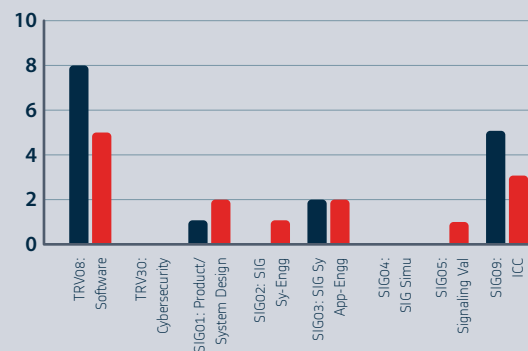
Innovation Kiosk: 06 (1 selected)

Inclusive mobility: 38 (1 finalist)



BLR TC WCE - 2021-22

- Existing SE/ME
- Nominated SE/ME



Patent talk by R Ravindra on "EQUIPMENT LIFE SPAN MONITORING SYSTEM AND METHOD"



Requesting all the readers to participate in this **quiz** (just 2 minutes). The quiz answers are implicit in this newsletter. Those who answer correctly will be recognized & rewarded. Quiz is open for the responses till 21st Feb 2022.

UPCOMING EVENTS

TekTalk on Blockchain Technology Introduction, PoC and Application

TekTalk on V&V Automation platform: Integrated approach for testing effectively & efficiently

Patent talk on Location and/or direction of travel detection system and method chain Technology



MooN team successfully delivered EULYNX baseline 0.1 consisting of configuration and RaSTA protocol. The demo was provided along with a generic engine and various SCI interfaces.

This effort was a collaboration between Villeurbanne, Bangalore, and Charleroi teams. The protocol stack was deployed on the MooN platform after adaptation to MooN architecture and interfaces. The stack is now available for usage on other similar platforms.

EULYNX is a European initiative by 13 Infrastructure Managers to standardize interfaces and elements of the signalling systems. The project was started in 2014, with a three-year lifespan for this stage. After three years the project organization has evolved into a standing organization for standardization of interfaces, based on a full baseline, with the publication of Baseline 2 in 2017. A further Baseline 3 was completed in 2020. The EULYNX Consortium welcomes any initiative from other entities in the sector to improve its standards. For more details visit <https://www.eulynx.eu/>

Reach out to **Ramesh** for more details

DEPLOYING SPA APPS WITHOUT CORS

Single Page Application or **SPA** developed on **Angular/VUE/React** have one caveat, that is **CORS**. Cors could be discouraged in your organization. Traditionally before the era of SPA, we never had such an issue, as any **web app** would work on one **domain** only. Adhering to **same origin policy of the browser** let's a developer use cookie on the client side and sessions on the server side and enjoy default security provided by browser.

A typical deployment with CORS looks like below, with two domains **http://localhost:5000** hosting the SPA and **http://localhost:8080** hosting your middleware. [Click here for the deployment picture.](#)

Application Software forum will take you through the steps to integrate your SPAs into your middleware in a short time.

Contact **Sesha** for further details.

DTLS: SECURING COMMUNICATIONS

Datagram Transport Layer Security **[DTLS]** is a protocol used to secure datagram-based communications. It is based on the stream-focused Transport Layer Security (TLS), providing a similar level of security. As a datagram protocol, DTLS does not guarantee the order of message delivery, or even that messages will be delivered at all. However, DTLS gains the benefits of datagram protocols, particularly with lower overhead and reduced latency.

DTLS is well-suited for securing applications and services that are delay-sensitive (and hence use datagram transport), tunnelling applications such as VPNs, and applications that tend to run out of file descriptors or socket buffers.



Handles unreliable transport layers: DTLS is built to handle unreliable transport layers and does not suffer from delays that occur with streaming protocols.



Privacy: DTLS provides top-notch security, enabling communication between client-server applications without the exchange being overheard or manipulated.



End-to-end security: DTLS uses most of the cipher suites described for TLS, including hash algorithms such as SHA-256, block cipher modes like AES-GCM, and the RSA public-key cryptosystem.

MooN will be the first product to support the DTLS

Contact **Nagu** for further details.