

Hexapod design for COSAMIRA testing

Description

In order to do rapid testing of Cosamira IMUs and monitoring software, an hexapod needs to be designed and prototyped.

This hexapod can displace a Cosamira unit in all 6-axis (x, y, z accelerations and rotations). Therefore we can quickly assess that internal IMUs are correctly working but also that they are correctly in line with the unit-housing. The hexapod could also be used in a R&D phase for reproducing specific train speed-profile in order to trigger some monitoring/safety algorithms and test their behavior in a controlled environment.

This thesis is three folds:

The first goal is to build and resolve all the necessary invert kinematic in order to drive the platform in a cartesian/spherical coordinate system.

The second part will be to develop the necessary physical interface between the computer that runs the kinematic equations and the actuators.

The third and last goal consist in designing the mechanical parts to link the platform and actuators together.

Required knowledge:

- * basics of mechanics/ kinematic simulation
- * electronics
- * 3D modelling
- * Python or else

If you are interested in this topic, please also register this on the Televic website at:

<https://www.televic.com/en/careers/internships-and-students> so we can confirm the topic is still available.

Televic Company/Department:

Televic develops, manufactures and installs top end high-tech communication systems for specific niche markets. A financially independent and stable group, Televic is divided into divisions that each focus on their specific market:

- [Televic Rail](#): passenger information systems and on-board control systems for trains
- [Televic Healthcare](#): communication systems for healthcare
- [Televic Conference](#): conference systems for large venues
- [Televic Education](#): multimedia and e-learning solutions for staff training and educational institutions

Televic creates added value for its customers by developing custom-made solutions and by continuously innovating at the cutting edge of technology.

With headquarters in Belgium and offices and plants across Europe, Asia and the US, Televic employs nearly 700 people worldwide.

About Televic Rail

With over 30 years of experience in designing, manufacturing and maintaining on-board communication and control systems, Televic Rail is a leading, trusted partner for railway operators and train builders worldwide.

Its Passenger Information Systems and Control Systems are high quality, tailor-made solutions that offer the flexibility, user-friendliness and stability that our clients ask for. Our various types of on-board control systems such as our bogie monitoring systems are innovative yet reliable products which are designed specifically for the railway business.

Trains and trams all around the world are equipped with Televic Rail solutions, from New Zealand to Canada, from China to the United States, from India to Belgium, England and France.

Contact

C.Viaene@TELEVIC.com

<https://www.televic.com/en/careers/internships-and-students>

Nature of the work

Level	Specialty	Type of work.	Location	Type of activities	Num of students
Academic Master, Bachelor, Master	Electronics / Hardware, Mechanical / Product design, Software	Research: 10% Implem.: 70% Experim.: 20%	Televic	Design, Experimenting, Programming	1