ETRO is the department of Electronics and Informatics of the Vrije Universiteit Brussel and focuses on fundamental, strategic and applied research. Its mission is to process large scale multi-dimensional, multi-spectral, multi-sensorial and distributed data.

**HIGHLIGHTS**

- Reliable partner for local and international industry, public services and hospitals
- Multidisciplinary research group focusing on end-to-end solutions
- Supported by state-of-the-art infrastructure (Visual Quality assessment lab, embedded systems lab, etc.)
EXPERTISE

1. Signal & Data acquisition systems
   - Advanced CMOS detectors for detecting multi-spectral optical signals in time domain reflectometry biomedical applications, including FLIM
   - Sensor systems for original industrial GHz-THz dielectric permittivity sensing applications targeting in-line control for Industry 4.0
   - Sound source localization
   - Electrical signals in the domain of IoT & multi-sensor networks

2. Data modelling and representation
   - Sparse representation of high-dimensional data
   - Source separation techniques based on sparsity
   - Compressive sensing of signals in bandwidth constrained sensing systems
   - Super-resolution techniques
   - Sparse signal recovery/classification techniques based on the modelling of the correlation between the Target signal and the side information
   - Pre-processing techniques to facilitate processing of complex-numbered data
   - Coding of high-dimensional, large volume, dynamic data such as medical volumetric data, holographic data, point clouds, light fields, meshes
   - Quality of experience modelling and measurement
   - Implementation on parallel computing architectures

3. Data analysis and rendering
   - Multi-channel image processing for computer-aided diagnosis
   - Novel metrics for efficient multi-modal registration
   - Simultaneous feature selection and classification
   - Hyperspectral signal processing
   - Biometrics
   - e-Health gaming
   - Text to speech synthesis
   - Computer-generated holography and holographic and light field rendering