

9h30 9<sup>th</sup> March 2022 - PLENARY SESSION

“ To shield or to absorb? ”

Prof. ir. dr. Frank Leferink, *Chair EMC - University of Twente  
Ambassador's Chair, KU Leuven Bruges and Kulak campus*

Chair: Prof. dr.ir. Davy Pissoot, *KU Leuven, Belgium*



IEEE Fellow Prof.dr.ir. Frank Leferink has been with **THALES** in the Netherlands since 1984, where he is responsible for the EMC activities for the development of new radar systems and naval platforms. He is also manager of the Network of Excellence for EMC of the THALES group. THALES is sponsoring his part-time, full-research, professor position at the **University of Twente**, where Frank is holding the Chair for EMC. Twenty-two PhD researchers, two assistant-professors and several master students are currently active in the EMC group. Frank is member of the Board of Directors of the IEEE EMC Society and associate editor of the IEEE Transactions on EMC and the new IEEE Letters on EMC Practice and Applications. He also holds the **Ambassador's Chair at KU Leuven Bruges and Kulak campus**.

**Abstract:**

Modern equipment is nearly always shielded and is using higher frequencies, thus smaller wavelengths. If the wavelength becomes smaller than the dimensions of a shielded enclosure, the fields will resonate which creates large amplitude variation inside the shielded enclosures, resulting in a drastic decrease of the shielded effectiveness. Any practical shielded enclosure needs a door, or a hatch, or a cap which is connected via screws, rivets, gaskets etc. The distance between any electrical connection shall be small that 1/100 of a wavelength, resulting in extremely short distances between screws, or very high requirements for gasket and compression. If we can decrease the field intensity inside the shielded enclosure, we can relax the strict requirements about those 1/100th short distances. Or even simple, we do not need a shielded enclosure anymore, but we need absorbers. Several examples of absorption compared to shielding will be shown. When to absorb and delete the shield: that's the question...