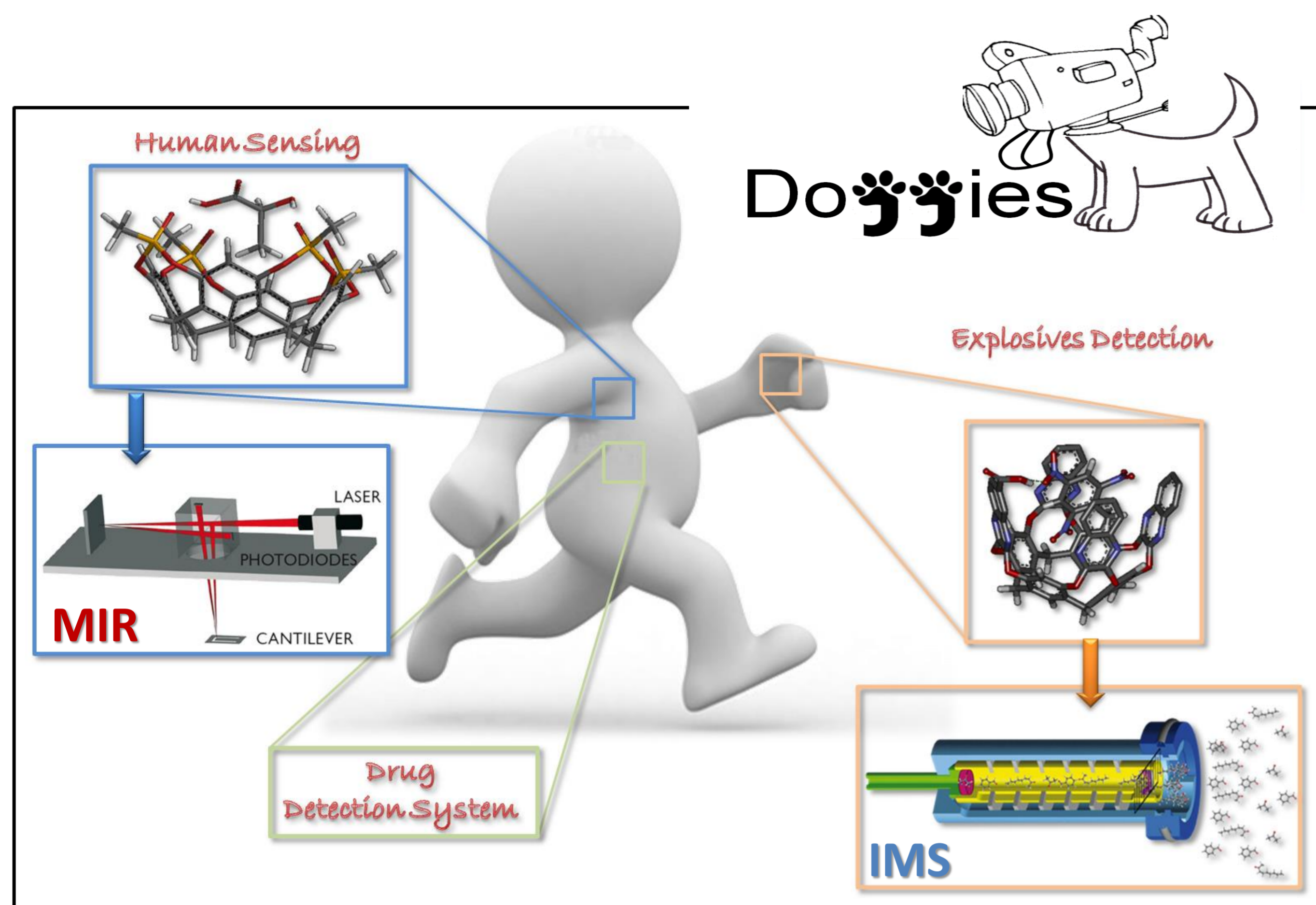


DETECTION OF OLFATORY TRACES BY ORTHOGONAL GAS IDENTIFICATION TECHNOLOGIES

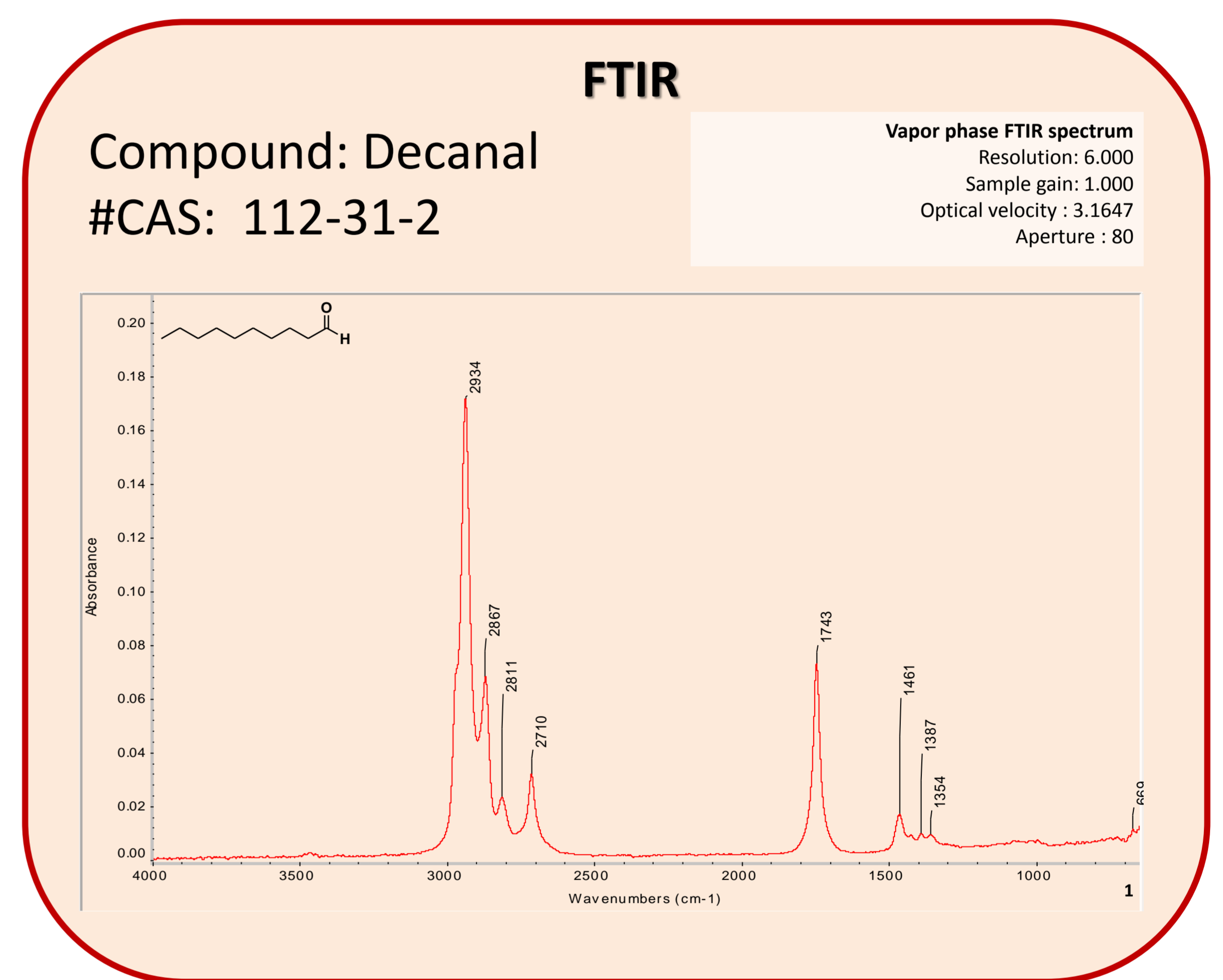
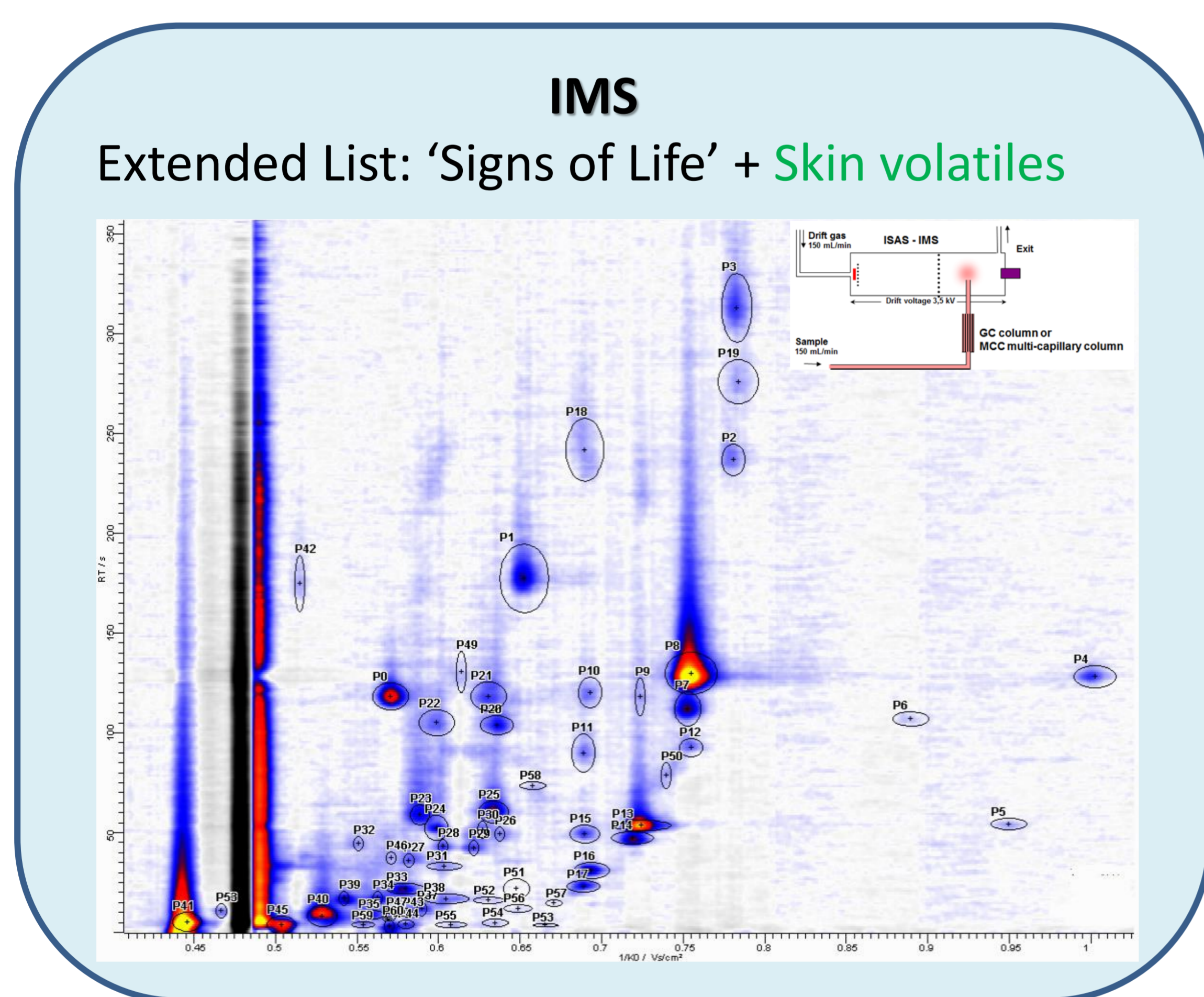
Baldovini N., Brun M., Carras M., Charvoz C., Dalcanale E., Danilidis Y., Dimitropoulos A., Dujourdy L., Filippi J-J., Gerard B., Grizis V., Kassouras V., Kauppinen I., Kotro J-P., Leventakis G., Marchini M., Nicoletti S., Pinalli R., Ragnoni A., Raittila J., Russo A., Sielemann S., Sinisalo S., Skountzos D., Syvridis D., Tsoulkas V., Vautz W., Zampolli S., Zavali D.

The DOGGIES project aims at demonstrating (1) an operational movable stand alone sensor for an efficient detection of hidden persons, drugs & explosives, (2) the potential adaptation of this solution for the detection of a much wider range of illegal substances.



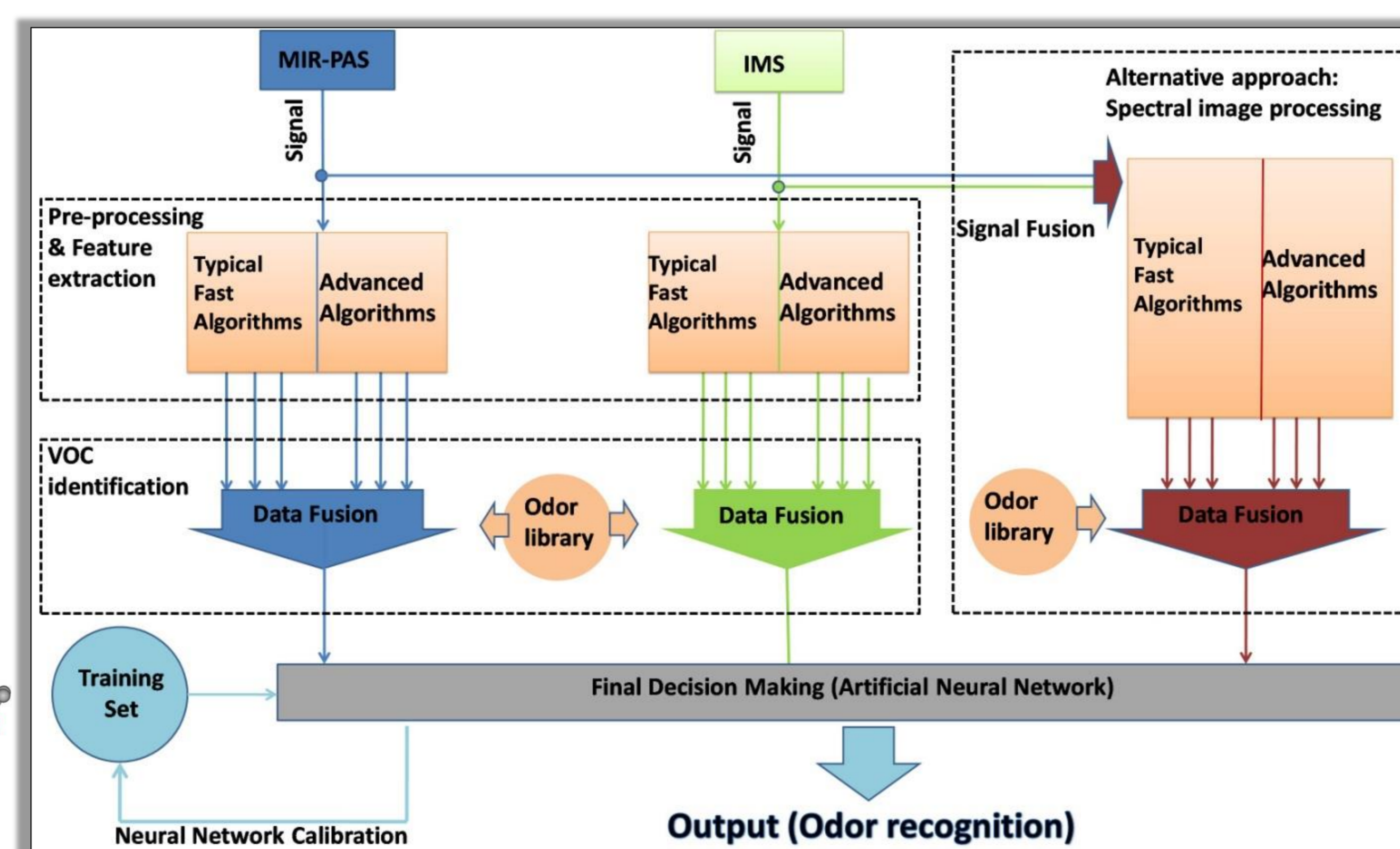
Concept: advanced trace detection approach combining 2 complementary techniques

- Mid-Infrared spectroscopy (MIR) technology, based on photoacoustic detection, which appears as the most powerful and promising to detect a very wide range of volatile organic compounds (VOCs); developments within DOGGIES will mainly target the demonstration of a widely tuneable integrated MIR source coupled with a miniature photo-acoustic cell
- Ion mobility spectrometry (IMS) technology, more mature, developments within DOGGIES will mainly target the use of non radio-active ionisation source



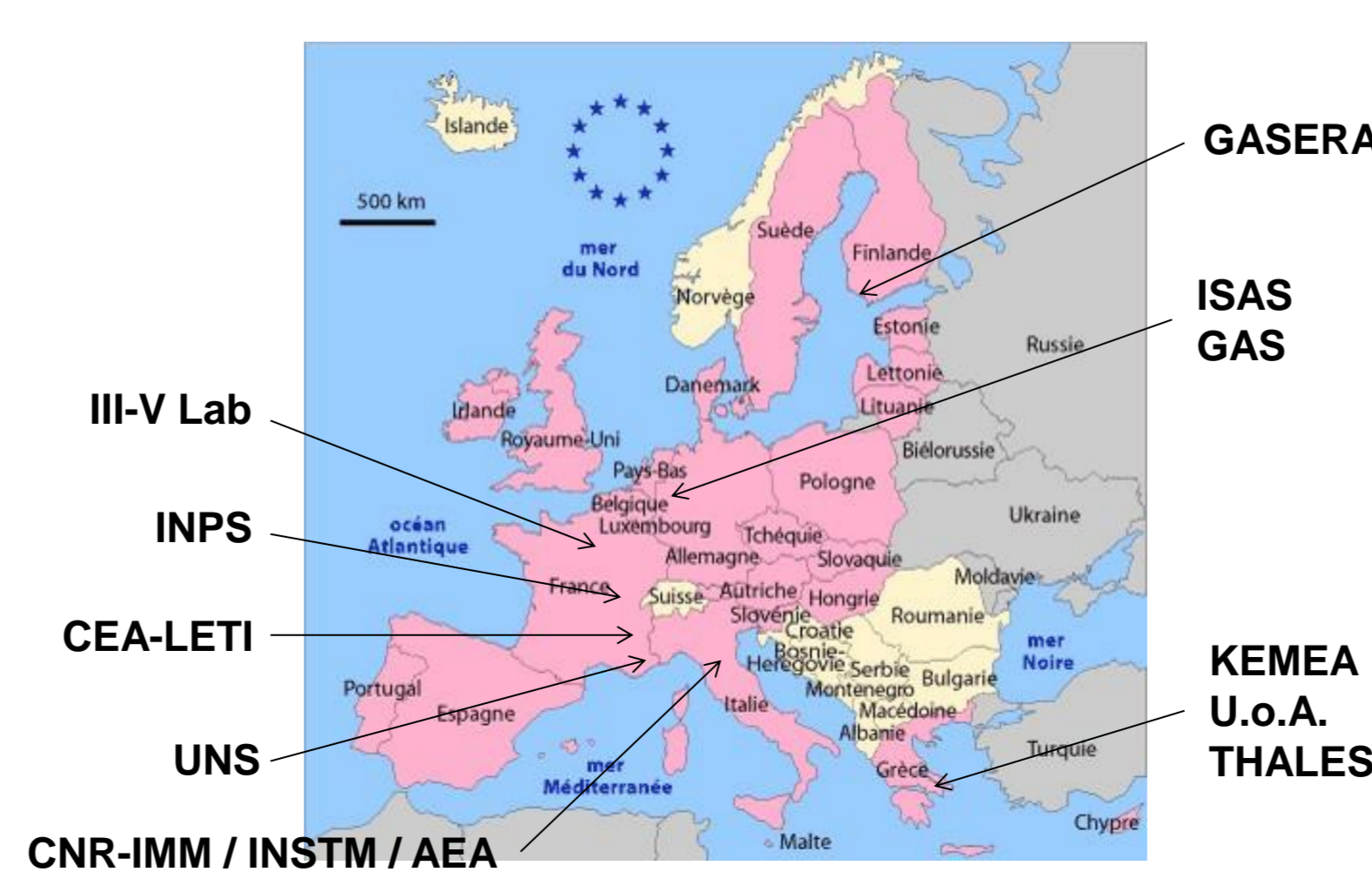
6 MAIN INNOVATIONS

- Identification of human emanating volatile compounds relevant for detection (olfactory signature of human body) → GC-MS sniffing / FTIR
- Compact IMS with a non radiative source (+ high sensitivity and selectivity)
- Versatile integrated pre-concentrators (specific cavitands receptors)



- Miniature Photo-Acoustic cell
- Widely tuneable (> 200cm⁻¹) integrated MIR (4-10µm) source
- Fusion of orthogonal data: MIR spectroscopy and IMS

The project activities cover basic studies in physics and chemistry, as well as sensor engineering and field tests



Consortium is composed of 13 partners from 5 EU countries, including 2 End-Users

