ADMONT

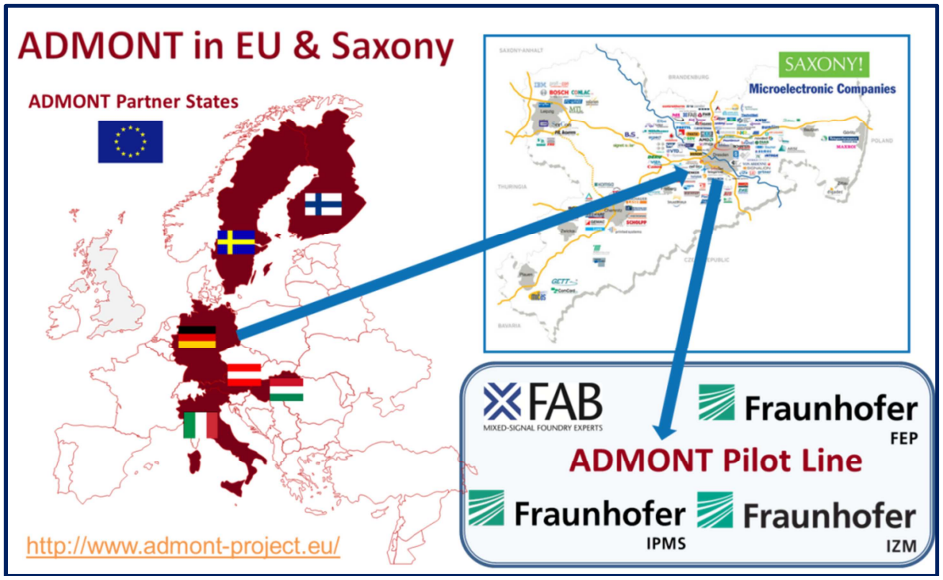
About a year ago, the wonderful world of abbreviations acquired a new member: ADMONT. Although it sounds at first rather like it might be tasty and involve almonds, it actually stands for "Advanced Distributed Pilot Line for More-than-Moore Technologies." What this all really means and why it's so interesting for X-FAB is the subject of this special report from X-PRESS.

HORIZON 2020, ECSEL, ADMONT, TRL – whoa, hold on there...

OK, one at a time, then. Scheduled to run until 2020, HORIZON 2020 is a European Union Framework Program for research and innovation. The ECSEL technology funding initiative is part of this program and aims to improve the international competitiveness of the European micro- and nanotechnology sectors. ECSEL stands for "**E**lectronic **C**omponents and **S**ystems for **E**uropean **L**eadership". The initiative targets near-industrial pilot series development work, which forms the link between research and mass production.

ADMONT is an ECSEL-funded project. The aim of ECSEL is to use pilot series to bridge the "valley of death" between basic research and industrialization. In the past, the industrialization of promising research results has too often ended in failure. In industry jargon, this means that ECSEL will be used to drive the transition of results from research projects at Technology Readiness Level (TRL) 4 to pilot production, i.e. TRLs 7 to 8.

The Technology Readiness Level is a scalar assessment that is applied to measure the development maturity of new technologies. Although originally developed by NASA in 1988 as a means of assessing aerospace technologies, the TRL system is now an established standard in other industries. In the context of the TRLs as defined by HORIZON 2020, Technology Readiness Level 4 means a technology validated under laboratory conditions. TRL 7 means that use of a prototype has been successfully demonstrated in its application environment. Technology Readiness Level 8 describes a complete and qualified system.



The ADMONT project in Europe

A look behind the scenes at ADMONT

Conceptually, ADMONT involves the aggregation of four Dresden-based clean rooms with different technological capabilities into a "distributed" pilot production line. This means that the capacity available for this pilot line is not located in a single clean room, but is shared across the clean rooms

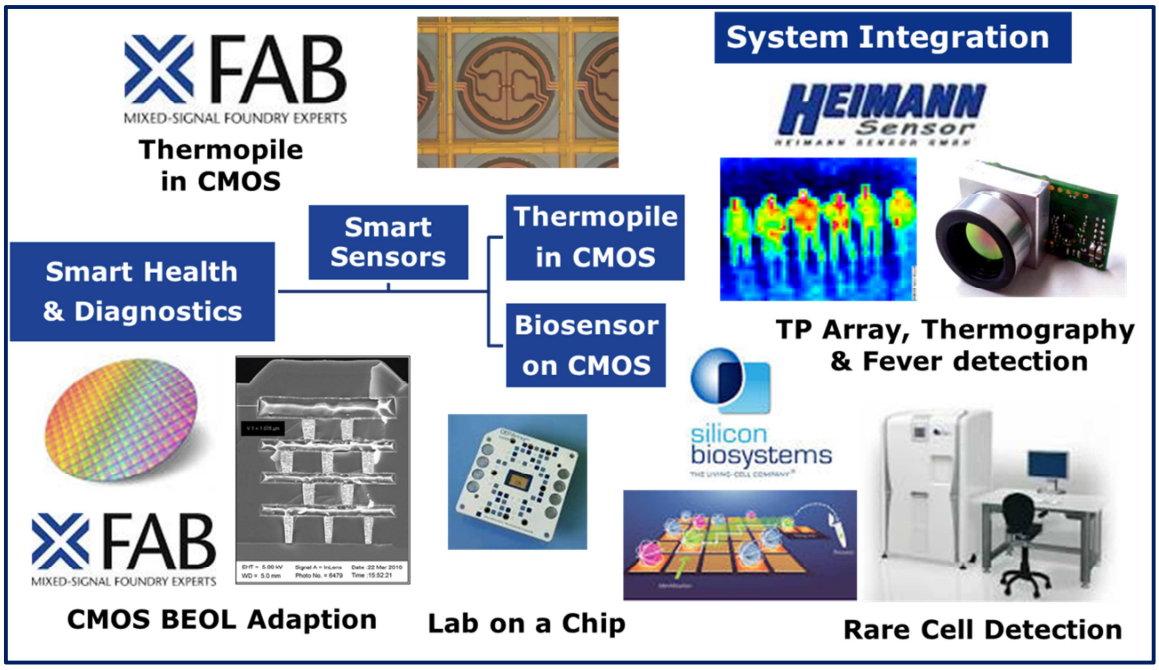
of multiple technology partners, whose expertise is combined to enable new functionality – true to the idea of "More than Moore."

The distributed ADMONT pilot line includes:

- X-FAB Dresden, with expertise in XH035 and XU035 CMOS automotive/ultra-high voltage technologies
- Fraunhofer FEP, with expertise in the field of organic semiconductor materials
- Fraunhofer IPMS, with competencies in sensor and actuator CMOS integration
- Fraunhofer ASSID, with a production line for 3D silicon system integration

ADMONT's vision is to offer its customers a one-stop shop and open-access technology platform that they can use at any point along the value chain – from the silicon wafer to the finished system. To demonstrate the capabilities of the ADMONT pilot line, six European partners have also been integrated into the project. These partner companies represent some very diverse application sectors, including medical devices, industrial electronics, infrared sensors and RFID transponders for mobile systems.

Factory automation topics are also being worked on within the project. Accordingly, it will be possible to manufacture a great many processes and products in large volumes and at high quality – "More than Moore" again – and to design the new interfaces between the distributed clean rooms to ensure that production proceeds as smoothly as possible.



Sample ADMONT project structure along the medical devices value chain

The ADMONT project was launched on May 1st, 2015 and will run for four years. Funding is being provided by the EU, the German Federal Ministry of Education and Research and the German State of Saxony. The decision to base ADMONT in Dresden was also influenced by the significance of the location and its status as Europe's #1 site for wafer output. The budget for the overall project is EUR 39.3 million, with funding covering a total of EUR 22.4 million of these costs. X-FAB will have around 30 percent of costs covered by funding. Incidentally, the funding application for ADMONT was over 100 pages long, and was submitted by X-FAB as the lead applicant together with Fraunhofer IMPS and partner Technikon.

Why does it make sense for X-FAB to be part of ADMONT?
First, it satisfies our primary precondition: conceptually, ADMONT is a perfect match for X-FAB's roadmap and our goal of establishing X-FAB as a "More than Moore" foundry. X-FAB Dresden can use the funds to expand its X*035 technology platform, advance it to production maturity, diversify into new application fields, and roll out next-generation factory automation and data communications. Last but not least, it will also acquire new customers and develop new business.

It's still a challenge, of course. The work that will be generated by the ADMONT project will be an add-on to our daily workload, and there are still a number of issues where clarification is needed. One example is interface management, for example, which has a major role to play in a pilot line distributed over four separate clean rooms. This also means ADMONT is an important agenda item for IT. Legal aspects must also be considered: if a product is manufactured by multiple partners, for example, how will product liability be handled? One final point is administration. What will be the public face of this distributed pilot line? Will there be an "ADMONT Sales Office" as a customer point of contact, for example? The website's already up and running, however. Visit www.admont-project.eu to have a look around!

What's the current project status and agenda for ADMONT?
Despite all of these challenges, the ADMONT project has got off to a good start. The "Grant & Consortium Agreement" document has been signed by all partners, the first tranche of funding has been paid, and the initial PR work has already been completed. In October, for example, ADMONT shared an information stand with Fraunhofer at the SEMICON Europa trade fair in Dresden. Workshops have been completed for all of ADMONT's internal work packages and activities have been defined for the first project year. The first Interim Report on results from research and technology is scheduled to be published in November, and the next major project meeting will be held in Dresden in January 2016. We say: go ADMONT!

Authors: Uta Steinbrecher, Karl-Heinz Stegemann, Gabriel Kittler