build machine-knowledge of employees in models. While exploring business cases with this platform, MAGICS is developing a chip that will allow further differentiation by enabling local self-learning, low power anomaly detection, and enabling sensors nodes that consume at least 10 times less power than the competition.

In 2020, an opportunity was landed to start a development trajectory for machine learning-based smart sensors. Working with a unique Belgian consortium, the project aims at producing food on Mars through underground ecosystems. MAGICS role is to develop a Nanodrone that can detect blossoms and fly autonomous from flower to flower to make production of fruits possible. This opportunity created a way for an intelligent vision chip where algorithms can run efficiently to detect certain objects in its environments. This final item allows MAGICS to provide a platform for reliable, autonomous operation of machines (motion control, ears and eyes for diagnosis) in the long term.

4.2. ITER promotes collaboration

Engaging research institutions, large industrial companies and SMEs is an important component of the ITER's positive impact in the EU. Collaboration on new technologies has allowed many SMEs forming new consortiums to bid for new contracts. This competition has further multiplied the synergies and networking activities.

Many of the developments for ITER have been made in collaboration with other European industries either through consortia or through the supplier chain, showing that the effort for fusion is really framed inside a wide European dimension.

The subcontracting activities between larger- and smaller-scale industries lead newly established firms to access more resources. This relationship does not only contribute to enhance their reputation and recognition in the market, but also to allow them to innovate in the area of product and services. Consequently, this translates into better economic performance of SMEs.

4.2.1. Case study N°3: ASE Optics

ASE Optics[21] is a good example showing how a micro SME can access ITER contracts.

Despite the size of the company, ASE Optics secured a subcontract for the design, mock-up and testing of an in-vessel viewing and metrology system in 2015. Since then, the company has quadrupled the number of employees to 8 while it has increased its technical capabilities in the medical and the aerospace industry as well as its turnover. On the one hand, participating in such a big science project enabled greater visibility and helped the company win contracts outside of nuclear fusion.

Moreover, the company has become familiar with the complex procurement procedures because of ITER's complicated specifications. Through the collaboration with F4E, ASE Optics has perfect confidence in its ability to overcome a range of barriers in accessing procurement opportunities and in winning contracts.

With its expertise in opto-mechanical engineering, ASE Optics continues to enhance its technical ability to develop new projects and make key design recommendations that should offset some major technical risks in custom optical design and development services.

[21] ASE Optics develops custom optoelectronic and optomechanical systems, precision optics, and prototypes, and provides optical engineering support for companies and research facilities.