Unmanned planes are increasingly securing their place in the civilian world and are recognised as a valuable tool for surveying and mapping purposes. Whether used for agriculture, the oil sector or construction, the market for civil applications for UAVs is expected to continue to expand in the coming decade.

The European Commission has calculated there are more than 400 projects across 20 European countries. These programmes aim to develop civil UAVs, using from some weighing a few grammes to others the size of an Airbus A320 jet. More than 80 percent of the companies involved in these projects are small and medium-sized businesses or start-ups.

The market is growing very rapidly, especially this year, said Johanna Claussen, chief executive of German manufacturer MAVinci. The company produces UAVs with a wingspan of 1.6 metres, designed to take aerial images for land surveys conducted for infrastructure projects, mines or applications in the building industry.

Claussen stated the market holds huge potential, and that MAVinci is experiencing an exceeding demand to their production capacity. Aviation and aerospace industry research firm Teal Group has estimated that annual global spending will almost double to USD11.4 billion by 2022. At the moment the largest part is still going toward military applications, but the European Commission foresees that a real market for civil applications is about to emerge.

The rise of UAVs for civil purposes requires legislation in order to dictate how, where and when UAVs are allowed to fly in public airspace. In addition, the new technology still faces concerns over safety and privacy. Authorities and companies will have to find the balance between privacy issues and the use of unmanned aerial systems.

Two shapes

The UAVs have in two basic variants. The first variant look like cockpit-less airplanes – MAVinci is producing this type. The second have helicopter-like rotor blades allowing them to hoover and take off and land in restricted spaces.

German rail operator Deutsche Bahn is testing the use of multi-rotor UAVs equipped with infrared cameras to catch vandals spraying graffiti on trains parked at its vast depots. Those UAVs, made by German firm microdrones for example, have a diameter of about 1 metre and cost USD80,000 each.

Smaller UAVs can be purchased for only a few hundred Euros; think of the Phantom quad-copter made by US-based DJI Innovations. Weighting less than 1 kilogramme, this variant can be carried in a backpack and comes with a mount for an outdoor sports camera.

Stefan Eichhorn, sales chief of Ascending Technologies from Munich, Germany, considers the possibilities as limitless. His company makes multi-rotor UAVs for aerial photography and video. The flagship model, called the AscTec Falcon 8, starts at around EUR18,000.