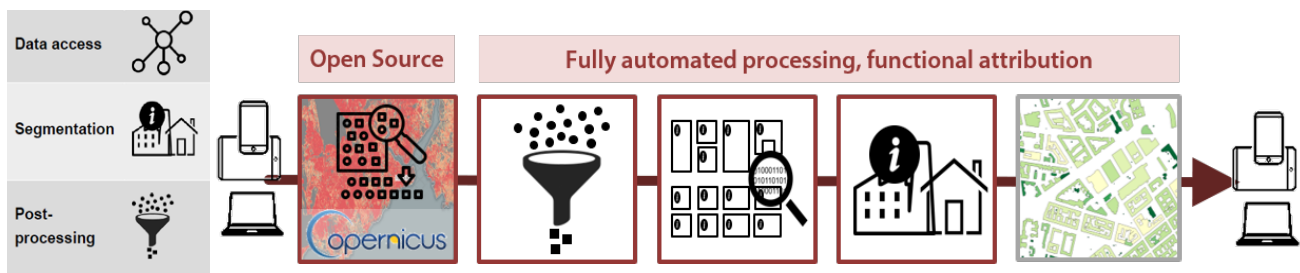## INTRODUCTION

InfraBASE provides a new automated process that combines highly efficient data access and extraction of high-quality building footprints (BFPs) from Very High Resolution (VHR) satellite images. This combination allows a more cost-effective production.

The goal of InfraBASE is:

- to enable purely machine interaction-based data access and
- to detect and delineate buidings effectively from VHR data

INNOVATIONS

The following main innovations of InfraBASE offer the ability to replace components of the traditional approach to building extraction:

NEW OBJECT RECOGNITION METHODS
Highly advanced image object recognition through machine learning and data mining techniques
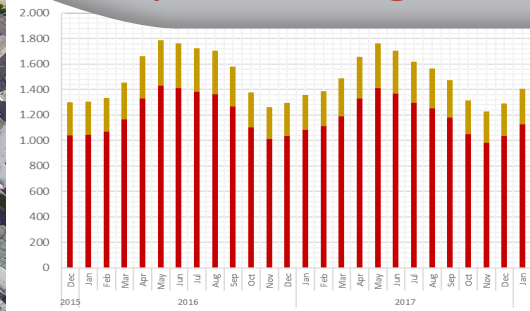
IT-DRIVEN DIGITAL DATA ACCESS
Purely machine interaction-based data access and provision of Analysis Ready Data (ARD)

CLOUD-BASED PLATFORMS
The key advances enabling these innovations are cloud-based platforms that allow access and calculation of VHR data in the same location, as well as advanced machine learning-based image recognition techniques such as artificial neural networks

USE CASES

Building Footprint detection of Hamburg (Germany)

Application: Urban and regional planning

Details: The availability of current building footprints from VHR satellite data is of fundamental importance for various stakeholders in the fields of politics, spatial planning and many more. Derivation of these building footprints using conventional methods is very costly, as up to now either manual digitizing or semi-manual methods have been used. The new approach aims to improve production and reduce costs.

APPLICATON SECTORS

Data on building footprints is still very incomplete and inconsistent. Thus, the newly developed building footprint detection will fulfill the demand and level of interest from the diverse user groups in Austria, Europe and beyond. An analysis based on business inquiries revealed that the public authorities and the commercial industries to have the most demand (Figure 1).
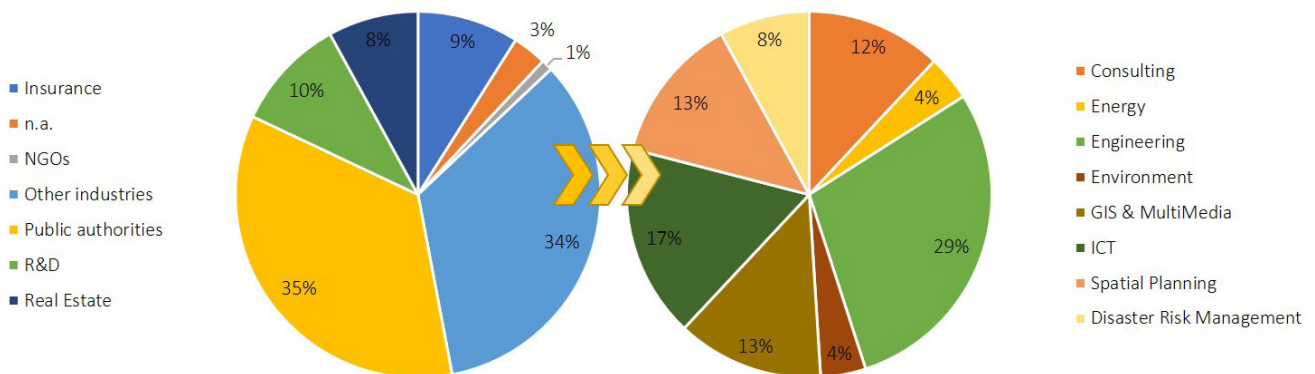

Figure 1. Customer inquiries for BFPs by sectors (left) and industrial segments (right).