

# Augmented Reality Adds Extra Dimension to Intergeo



With Pokémon Go turning the hunt for virtual monsters into a global craze, one could be forgiven for thinking that augmented reality (AR) had only just been invented. However, AR is neither a new nor an unknown technology. At Intergeo 2016, a large number of exhibitors will be showcasing their AR applications for urban planning, utility companies and much more besides.

Augmented reality creates huge added value for numerous scenarios by adding text/image-based information levels that are invisible to the human eye. At Intergeo 2016, for example, the Berlin-based Game Science Center (GSC) will be presenting its augmented reality sandbox. Transported back to their childhood, visitors will dig in actual sand and see how contour lines and levels simultaneously adapt to the newly created topography. AR makes this possible. Children and adults alike learn to read maps and understand their geography interactively through play. The AR sandbox is by no means simply an (educational) toy, though. It can be adapted for tasks such as planning the location of wind turbines or measures for protecting against tsunamis.

## HafenCity University

The geomatics team from HafenCity University in Hamburg is also exhibiting at Intergeo 2016. Researchers there have increasingly been using augmented reality just recently, combining it with 3D models recorded photogrammetrically or by means of laser scanning to visualise archaeological or historical architecture data. Visitors to the 500-year-old “Alt Segeberger Bürgerhaus” museum will thus in future be able to experience the building as it looked 100, 200 or 300 years ago.

## AR and GIS

Scientific applications and research projects are far from the only uses for augmented reality, though. At Intergeo 2016, for example, Austrian GIS supplier Grintec will be exhibiting the fully 3D/AR-enabled mobile GIS Augview. This innovation combines the conventional map view from the 2D or 3D GIS data with the augmented reality view. All the details that otherwise remain hidden from the human eye suddenly become real – from underground pipes running below streets, hydrants or waterworks valves that are no longer visible in the event of floods to newly planned houses and municipal installations of all kinds. Thanks to the AR view, all this is intuitively recorded and quickly grasped. The geospatial AR application can do far more than simply visualise things, though. Connection to an external GNSS receiver enables field staff to enter measurements directly into the GIS with centimetre accuracy. Utility companies and municipalities are already using this cutting-edge technology because it enables them to avoid costly errors, improve their quality and make their processes more efficient. Dominik Gärner, project engineer at Grintec, is convinced that AR will take off with the increasing digitisation of the business world.

## 3D and AR

Esri Deutschland shares this belief that 3D and AR are the next big thing in the industry and has already integrated virtual reality (VR) into its 3D product line. As part of an innovation network entitled “Morgenstadt – City Insights”, for example, Esri is using 3D technology and VR to work on predicting, developing and implementing innovations for tomorrow’s cities. The GIS supplier is involved in this Fraunhofer Institute initiative with its 3D-enabled ArcGIS technology (ArcGIS platform and Esri CityEngine). In 3D urban models, which have become a key planning tool for towns and cities, the intention is to involve inhabitants in the planning process. 3D plans in conjunction with AR and VR make planning processes more transparent and the innovative involvement of city dwellers creates a real-time experience. Simulations of the spread of noise/pollutants or of areas exposed to the sun or in the shade help workable, sustainable decisions to be reached.

These and many other AR and VR applications will be on show at [Intergeo 2016](https://www.intergeo2016.com/) from 11 to 13 October 2016 in Hamburg.