Intergraph Presents First Truly Green GIS

By reducing storage requirements and energy costs, more efficient data centres are also more environmentally friendly. Intergraph aims to make a contribution to these efforts with its new *Green GIS* initiative in Europe, which offers a more energy-efficient and therefore climate-friendly IT process. Intergraph is placing its Green GIS initiative in the spotlight when it attends the world's leading geodesy, geoinformation and land management congress and fair – INTERGEO, opening on 15 September 2015 in Stuttgart, Germany.

With the patented ECW (Enhanced Compressed Wavelet) data compression format, in combination with the new version of the ERDAS APOLLO application, Intergraph and its Hexagon Geospatial software offer a solution package that drastically reduces the volume of raster data and point clouds. This minimises demands on storage capacity and the associated operating and cooling power requirements. ERDAS APOLLO also minimises the demand for servers, computing power and data transfer rates. Here, Intergraph's Green GIS initiative is pioneering in terms of climate-friendly geospatial solutions and therefore represents the first true green GIS available on the market. Intergraph has been nominated for the Wichmann Innovation Award 2015 (http://gispoint.de/wia/2015.html) for its Green GIS initiative.

“Software has a significant influence in terms of the enterprise carbon footprint. The global explosion in data volumes under the banner of *big data* results in an excessive demand for, and operation of computers and servers. This costs energy and as a direct consequence releases carbon dioxide harmful to the climate”, explains Maximilian Weber, Senior Vice President, Intergraph Security, Government & Infrastructure EMEA. “We support our customers efforts to reduce data volumes and data transfer bandwidths, which can help lower carbon emissions of their IT processes.”

The ECW (Enhanced Compressed Wavelet) data compression format patented by Intergraph is capable of reducing raster data by up to 95%. Lower data volumes mean considerably lower server capacities and reduced power consumption. Intergraph has demonstrated this saving capacity for the first time in a project for the power company RWE, which shrank the complete aerial image dataset of Germany to 5% of its original size – while remaining visually lossless.

Intergraph is now pursuing Green GIS further with its new version of ERDAS APOLLO: the software for effectively managing, organising and distributing any kind of spatial data – from vectors, point clouds and image data to supplementary business data. Efficient data cataloguing and an innovative data transfer technology reduce the necessary bandwidth when transmitting data and also save massively on computing power and reduce energy use.

The technology group Fujitsu, an Intergraph partner in the German-speaking region, has already assumed a worldwide pioneering role for years in terms of Green IT. Fujitsu even elevated measures for positively influencing the carbon balance to represent their own corporate strategy at an early stage. Andreas Kleinknecht, Public Sector Clients Senior Director and Fujitsu Deutschland management team member, evaluates the role of Intergraph's Green GIS initiative thus: “The product carbon footprint can be positively influenced by rationalised design of system resources, for example RAM, and by optimising the server workload. If resource-saving software is also deployed – as in the case of Intergraph's solutions, the potentials for improving the carbon balance are optimally utilised.”

The losses caused by inefficient software can no longer be compensated by the now comparatively minor savings potentials on the hardware side. In parallel to this, humanity is currently witnessing a veritable explosion in data volumes. The diversity of sensors deliver a previously unprecedented flood of information. In addition, new geodata products with enormous demands on storage capacity and computing power are generated, such as 3D point clouds and pixel-clear digital surface models by means of the SGM (semi-global matching) algorithm. Modern satellites and drones produce data with great precision and in almost unimaginable volumes – this all needs to be processed, catalogued and delivered.

The fact that Green IT, coupled with Intergraph's software-driven measures for improving the carbon balance, can also display positive financial effects is demonstrated in a project example featuring Amazon Cloud Storage Service S3. This shows that for 71 terabytes of image data at tile cache level 19 and 30 centimetres tile width costs are lower by 98% by employing ECW compression. Savings of more than 4,000 Euros monthly and up to 65,000 Euros per annum can be calculated for cloud server utilisation.

Intergraph's software-driven Green IT approach is new and effectively supplements previous environmental and climate protection efforts made by the information and communications technology sector. “This also certainly played a role in convincing the expert jury to nominate Intergraph's Green GIS initiative for the Wichmann Innovation Award 2015”, says Dr Matthias Alisch, Senior Marketing Manager at Intergraph EMEA.

Further information relating to Green IT, Green GIS and the carbon footprint initiative can be found at www.Green-GIS.de.