

BENEFITS REALISATION THROUGH INTEGRATED GIS AND IT SOLUTIONS



COWI

Technical and commercial expertise is crucial when working with GIS and IT. With COWI as your partner, your organisation benefits from a supplier of both independent consultancy and integrated IT solutions that support efficient and effective digitisation – from business goals to development, operations and support.

We call that 360° consultancy.

Our services encompass:



› IT MANAGEMENT CONSULTANCY

We cover the whole value chain in IT, management and applicable legislation: tender consultancy, business analysis, requirement analysis, specifications and tender processes. We also provide consultancy on business case analyses and benefits realisation, programme and project management (MSP and PRINCE2) as well as enterprise, solution and system architecture.



› DEVELOPMENT AND MAINTENANCE OF GIS AND IT SOLUTIONS

We develop customised solutions based on state-of-the-art technologies. The development process follows recognised best practices such as PRINCE2 and Scrum to ensure flexibility and learning in close cooperation with the customer. For instance, we develop solutions for efficient collection and analysis of data in public and private sectors.



› IT SUPPORT AND OPERATIONS

We offer support and operation – on premises or in the cloud – of IT solutions, focusing particularly on GIS solutions. We apply the recognised best-practice processes in the ITIL framework to ensure flexible and professional cooperation with our customers.

This brochure presents some of the projects we have carried out within the above-mentioned service areas.

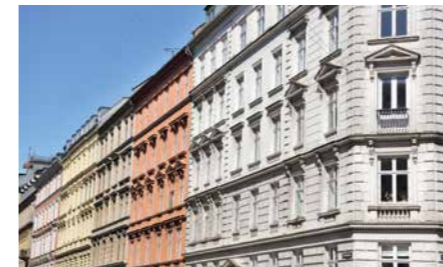


IT MANAGEMENT CONSULTANCY



NEW WEATHER STATIONS FOR THE DANISH METEOROLOGICAL INSTITUTE (DMI)

As main consultant to DMI, COWI is renewing DMI's observation network of weather and precipitation stations in Denmark and Greenland, and central IT systems for, e.g., distribution of meteorological data. The project aims to build an up-to-date observation network that meets DMI's operating requirements and optimises operating costs. To this end, a general IT architecture and a modern IT platform are established along with uniform hardware components in monitoring stations.



CONSULTANCY TO THE DANISH MINISTRY FOR TAXATION

The Danish Ministry for Taxation (ICE) is developing its future property valuation system. COWI provides consultancy to ICE on the use of geographical information using GIS and public geodata. The consultancy covers methods for valuation of properties based on geographical criteria, identification of data sources and assessment of their suitability, requirements for content, quality, and need for data processing, as well as GIS consultancy on data modelling and establishment of technical GIS architecture.



SERVICE MANAGEMENT INFRASTRUCTURE FOR SATCEN

The EU Satellite Centre (SatCen) provides the EU with military intelligence based on geospatial data. SatCen intends to establish a new service management infrastructure (SMI), to reduce hours spent on processing projects. As input to the tender process, COWI carried out a feasibility study and prepared technical specifications for the future development of the SMI, which SatCen will use to back the Copernicus Support for External Action (SEA) service.



SMART CITY AND INTERNET OF THINGS (IOT)

COWI has carried out several Smart City projects, e.g. for the City of Copenhagen and the LOOP City cooperation, which aim at specifying and calculating the economic consequences of Smart City initiatives and at analysing technical options and constraints. COWI's approach combines solid engineering skills with IT knowhow and economic analyses in order to translate technological hype into real, value-adding solutions.



DEVELOPMENT AND MAINTENANCE OF GIS AND IT SOLUTIONS



IT SYSTEM FOR MAPPING AND MANAGING POLLUTED SOIL

A team of COWI developers is responsible for maintaining and enhancing JAR – the national register of soil pollution. The register enables the regions to effectively manage sites with polluted soil. The web-based JAR system combines all data necessary to manage areas according to the Soil Pollution Act – including GIS, pollution and administrative data. JAR contains all the data needed to facilitate decision-making and case processing by the regions.



MANAGEMENT OF EU AGRICULTURAL SUBSIDIES

COWI develops and maintains the Danish Agricultural Agency's advanced GIS solution IMK2, which the Agency uses to handle farmers' applications for EU agricultural subsidies, and to subsequently administrate the subsidies and verify the subsidy basis. With some 45,000 users and highly complex GIS calculations based on some 200 map layers, the system makes extremely high demands on system performance and reliability. COWI has also developed a mobile application that facilitates workflows for Agency staff.



INTERNET OF THINGS (IOT) FOR AUTOMATIC ENVIRONMENTAL MONITORING

COWI developed the Danish Nature Agency's future IoT platform for collection of data from environmental sensors. The system continuously gathers data from sensors that measure, e.g., water level, temperature, acidity and salinity in lakes and watercourses. Within the next couple of years, the system is expected to handle in excess of 10,000 sensors.



DANISH REGISTER OF UNDERGROUND CABLE OWNERS (LER)

COWI heads operation, maintenance and further development of the LER system for the Ministry of Housing, Urban and Rural Affairs. LER contains information on the geographical interest areas of some 5,000 utility owners. The system provides contractors and others carrying out excavations with information on owners of utility lines in a specific area. The objective is to reduce the risk of damage to utility lines and increase supply reliability.



GREENLANDIC BASIC DATA REGISTER FOR PLACES AND REAL ESTATE

For the Greenlandic Agency for Digitisation, a basic data register for places and real estate is established. Data owners use it to maintain basic data, mainly via web applications. A rule engine assists data owners in validating data completion and quality. The register includes full history of all operational data for the processing of cases and complaints. The project includes, e.g., technical consultancy, enterprise, system and solution architecture, development, guidelines and training material, as well as operation and maintenance.



MOBILE SOLUTION FOR REGISTRATION OF LIGHTING MASTS IN THE CITY OF AARHUS

The City of Aarhus aims to modernise operation and maintenance of its road lighting. To this end, COWI established an efficient registration system for collecting accurate GPS positions and master data pertaining to some 54,000 lighting masts in the municipality. The solution is based on the GIS4Mobile platform, which, among other things, supports on-/offline synchronisation with mobile units and integration with the City's GIS systems.



PROMAN FACILITATES UTILITY WORKS

COWI has developed the PROMAN application for facilitating utility works on major construction and building projects. PROMAN is a GIS and web solution that supports the process of collecting utility information from LER (the Danish Register of Underground Cable Owners) and utility owners, and preparing often complex utility relocation works. PROMAN supports distributed workflow in the design phase, since the system manages a number of roles and actors with planned and defined rights on the project.



GIS ANALYSIS FOR LOCALISATION OF NEWCOMERS IN THE MUNICIPALITY OF JAMMERBUGT

The Municipality of Jammerbugt and COWI jointly developed a GIS-based system to help administrations identify solutions that support sustainable planning of the integration of refugees and immigrants. The solution calls for insight into local possibilities and newcomers' needs and competencies, and the analysis considers transport options and sociodemographic aspects. The solution was awarded the Danish 2017 Geodata Award.



IT SUPPORT AND OPERATIONS



MAPPING AND MANAGEMENT OF POLLUTED SOIL

For JAR Samarbejdet (a collaboration between the Danish regions), COWI is responsible for maintenance, enhancement and support of JAR – the national register of soil pollution. The register enables the regions to effectively manage sites with polluted soil. COWI also supports each region's JAR operations and hosts JAR for one region. COWI's team provides system support and COWI's hosting centre handles operational issues.



OPERATING SYSTEMS – IOT (INTERNET OF THINGS)

COWI has developed multiple operating systems, e.g., for performance monitoring. The systems continually collect performance data from sensors mounted in strategic places. Among other things, the systems are used to monitor bridge integrity and to collect water and traffic data. The systems are designed to collect data via the 3G/4G mobile network, and they send out alarms via email and text messages if the data exceeds fixed threshold limits, or if the systems experience technical problems.



GIS COURSES

GIS is popular with many companies and public administrations and is becoming a standard tool such as Word and Excel. COWI regularly offers GIS courses on, e.g., QGIS and MapInfo. Web maps have also become more widespread, but the basic skills needed to extract simple GIS data or seize the opportunities of existing statistical data are priceless. The courses aim to build the participants' competencies, working their way through the GIS program, moving from simple to ever more advanced exercises.



MAERSK OIL, GIS OPERATION AND APPLICATION SUPPORT

COWI provides 2nd-line support to Maersk Oil's (Now Total) global GIS infrastructure, which COWI designed and covers Maersk Oil activities on all locations worldwide. The support covers both service delivery management and subject matter expertise, which in practice means that all support is managed and handled by COWI's support team. The support is based on a fixed service level agreement (SLA) and provided by a permanent team of supporters.



ABOUT COWI

COWI is a leading consulting company that creates value for customers, people and society through our unique 360° approach. As part of the COWI organisation, our GIS and IT experts have access to more than 6,600 colleagues working in a broad range of specialist fields. Many projects are carried out in cooperation across the organisation to achieve synergies and access domain knowledge that benefits the projects.

All of our services are defined in COWI's quality management system, which is based on our long-standing experience in project implementation, and which is certified according to the ISO 9001 standard. This ensures a high level of quality in all processes.

With offices all over the world, we draw on global project experience and competencies when handling projects, irrespective of their size or location in the world. At any given moment, we are involved in more than 12,000 projects.

We have more than 85 years of experience in the consulting business, and together with our customers, we create coherence in tomorrow's sustainable societies.

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