



WORKFORCE MANAGEMENT FOR

SMART METER ROLLOUT

BASED ON BLÅ COORDINATOR



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ABOUT

ISMOBILE

The first company that has brought together on-demand service chain management, advanced optimization and mobile technologies into a highly scalable “best of breed” mobile workforce solution.

The world is constantly changing. Affected by the global economy, service providers are regularly forced to reevaluate their competitiveness and how to best position themselves in the business ecosystem. In addition, service industry workers demand a higher level of participation and more dynamic organisational structures. But these ideas are traditionally counterintuitive to cost-efficiency.

In addition, business is personal. Business is conducted between people, not companies. When all is said and done, how well we get along determines who we work with. But as we rely more on our phones and email, on call centers or an inhouse sales force, we spend less time face-to-face with our customers.

By empowering field service personnel you can reclaim the customer visit. They are out there, every day, close to your customer; they must radiate professionalism, expertise and the ability to deliver the right level of service.

The world needs an enterprise with an entirely new approach to mobile workforce management. Welcome to IsMobile – creating a Smarter, Agile and more Human service.

Efficiency starts and ends with serving People.

KEY FACTS ABOUT ISMOBILE

- isMobile is a rapidly growing Swedish company founded in 2000, active in the mobile workforce management solution market.
- TeliaSonera is the main share holder. Other share holders are IBM (strategic shareholder), the founders and the isMobile staff.
- Blå Coordinator is the state-of-the-art comprehensive mobile workforce management solution from isMobile that is delivered to world-market clients like Eltel Networks, Gas Natural, Vattenfall, Maintpartner, Kamstrup, NCC and many more.
- isMobile delivers two types of solutions; either an enterprise workforce management solution with the full-blown Blå Coordinator OR specific optimized mobile workforce management packages as a cloud service for specific high-volume applications like Smart Meter Rollout.
- Sales and implementation is done through a network of partners to guarantee total customer satisfaction

SMART METER ROLLOUT

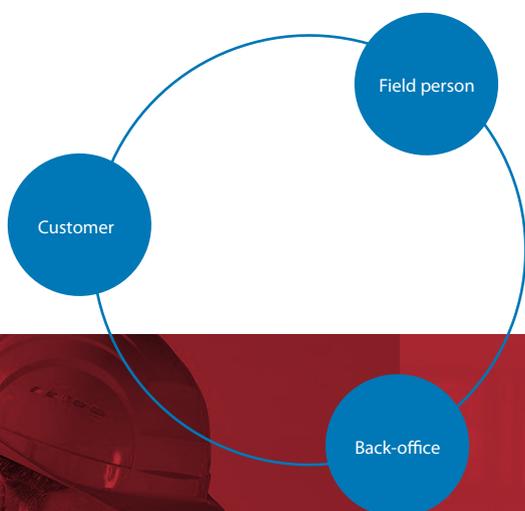
BASED ON BLÅ COORDINATOR

All our customer experiences are built-in into our full-blown enterprise workforce management solution Blå Coordinator. For high-volume applications like Smart Meter Rollout, we have a specific optimized mobile workforce management package (using necessary Blå base modules) with a predefined workflow for meter exchange. Offered as a cloud service.

Situation-smart workforce management

Blå Coordinator with a human BOTTOM-UP approach made as an agile system to deliver bottom-line efficiency. A system built to react to real-time changes. Always - in every situation - having three categories of participants in mind;

Field service person/team, the Back-office and the Customer.



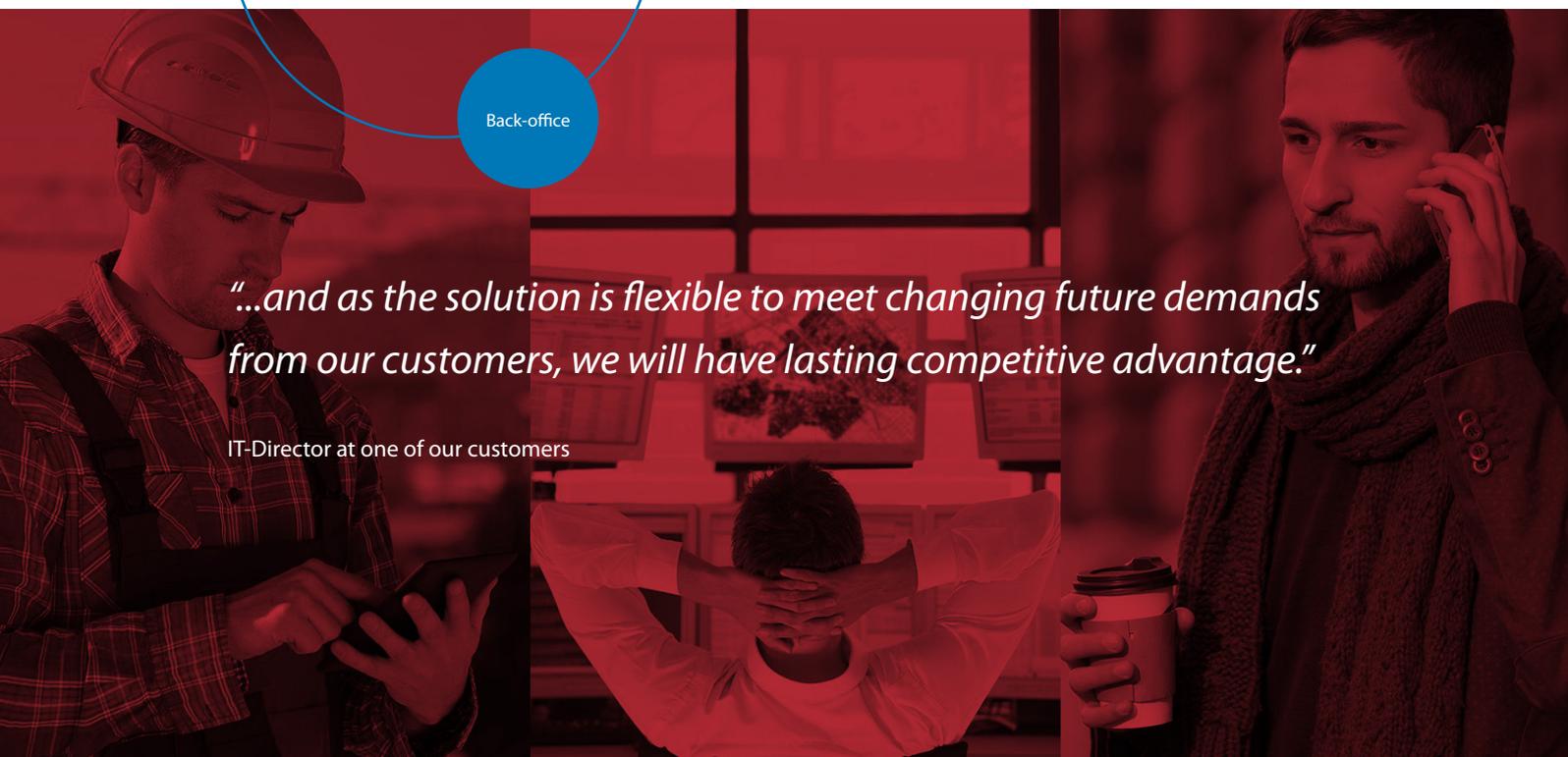
Key values for isMobile Smart Meter Rollout package

In dealing with large-scale projects — such as rolling out smart metering to households nationwide — there are a number of experiences that we see crucial for a winning workforce management solution:

- High hit-rate for first appointment - smart planning and customer interaction
- Get in control of massive volume of work - handling real-time changes
- Efficient Meter switch
- Quality Control & Follow-up
- Efficient Logistics - plan, monitor and control flow of Smart Meter devices

"...and as the solution is flexible to meet changing future demands from our customers, we will have lasting competitive advantage."

IT-Director at one of our customers





OPTIMIZED FOR METER EXCHANGE

UNDERSTANDING THE

WORKFLOW

A predefined workflow for meter exchange.

Step-by-step

The Smart Meter Rollout package (based on Blå Coordinator) has a predefined meter roll-out workflow. The first step in that process is to import information needed for roll-out from the customer's information system. The import can be done by either using non real-time transfer of information (one example is csv. files) or by using real-time transfer of information (one example is web service based integration).

“Optimized pre-booking of time slots, automatic letter generation, customer portal rebooking...”



IMPORT

Import information needed to roll-out from your own information systems. The import can be done by either using non real-time transfer of data (using csv files as an example) or by using real-time transfer of data such as integrated web services.



PRE-PLANNING

Begins with organizing the work into Metropolitan Statistical Areas (MSA) by using rules, automatic GIS tools or Blå Cockpit or a combination of the above. Based on the MSA information and the groups of resources available, a pre-planned time slot reservation is done.



LETTER

Based on the information from the customer information system and the pre-planning, a letter is automatically created stating the time slot in which the work order is to be completed. The letter contains a reference on how to rebook the work order if needed.



REBOOKING

The Rebooking portal and SMS reminder provide efficiency regarding communications between end-customer and the call center.



PLANNING AND EXCHANGE

An essential part of meter exchange process is the planning of resources and support for the technician to optimize her/his work, see chapter Situation-smart functionality for Blå Coordinator. This include automated re-routing of field persons based on real-time changes. Smart Meter Rollout is based on using standard SmartPhones or Laptops.



REPORT

Smart Meter Rollout supports both Operational Report generation as well as Follow-up reporting. The predefined report has multiple functions to capture information and photos about the old and the new meter.

CREATING

THE WORKORDERS

Smart Meter Rollout makes it possible for the customer to select how work orders should be created.

The alternatives

Smart Meter Rollout (based on Blå Coordinator) includes an interface for the user to create work orders, batch oriented integration using files or using real-time integration.

The user interface to create work orders is configurable making it possible to add customer specific fields that can use any information stored in Blå Coordinator or information from other data sources like external interfaces and databases.

The batch-oriented import function makes it possible to import work orders based on content in files. In Blå Coordinator there are tools to help the user to handle different import format.

Real-time integration is supported by the Blå Coordinator integration adaptor (CIA). This includes work order creation, modification, assignment of resources to execute a work order, receive notifications of work orders or assignment status changes etc.

The wide range of messages required by these interactions must be efficiently and timely dispatched between Coordinator server and its cooperating external systems. It is also important that the communication is simple to adapt as the external systems come in many flavours, usually with their own data formats and content. A number of different transportation protocols, i.e. XML/JMS, XML/SOAP/JMS and XML/SOAP/HTTP

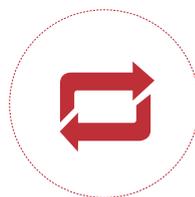
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IMPORTING FROM SPREADSHEETS

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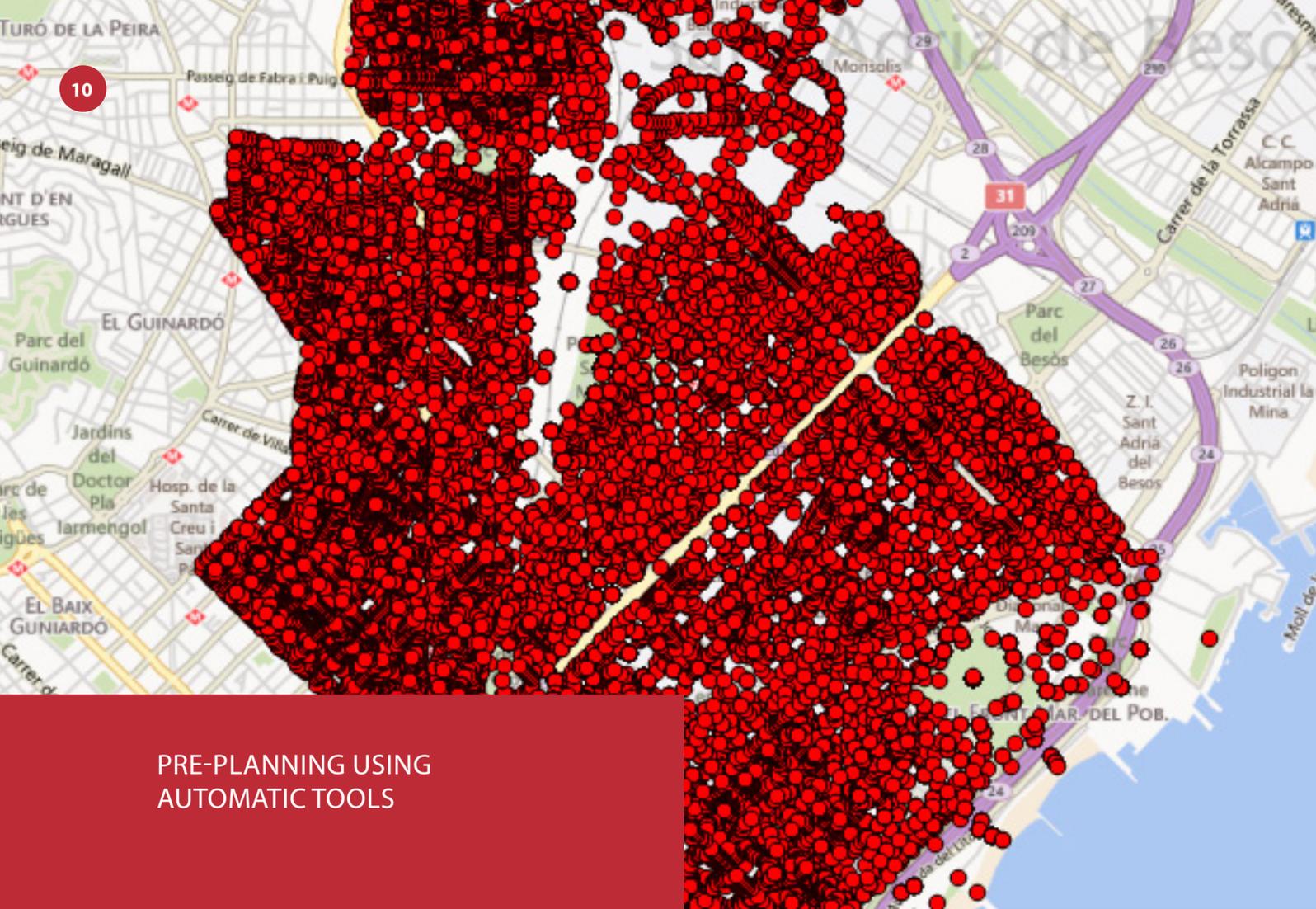
INTEGRATION

Real-time integration is supported by the Blå Coordinator integration adaptor (CIA).



USER CREATION

Front-end utility for single workorder creation.



PRE-PLANNING USING AUTOMATIC TOOLS

PRE-PLANNING YOUR PROJECTS

Working with large workorder sets

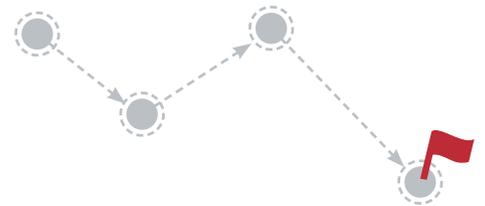
For big meter roll-out projects there are a large number of meters that should be exchanged. Blå Coordinator includes pre-planning automation tools to achieve project efficiency.

To divide the meter exchange point into suitable blocks GIS information can be used for geographical awareness. Creating blocks that does not require technicians to cross large roads/railways/lakes etc. can be taken into consideration.

Route optimization

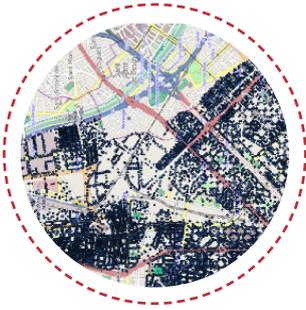
The blocks are automatically splitted or merged to create equally sized chunks to fit the roll-out plan.

Based on this an optimized route is created based on "greedy" algorithms and heuristics. The result is a pre-plan. One view of the pre-plan is shown above.



WORKORDER PLANNING

BEHIND THE SCENES



SET OF WORKORDERS

Start with a set of points where each point represents an assignment



BLOCK GRID BASED ON STREET MAP DATA

Divide the point set into suitable blocks – use GIS tools for geographical awareness. If workers are walking, create blocks which does not require them to cross large roads/railways/lakes etc.



BLOCK MERGE

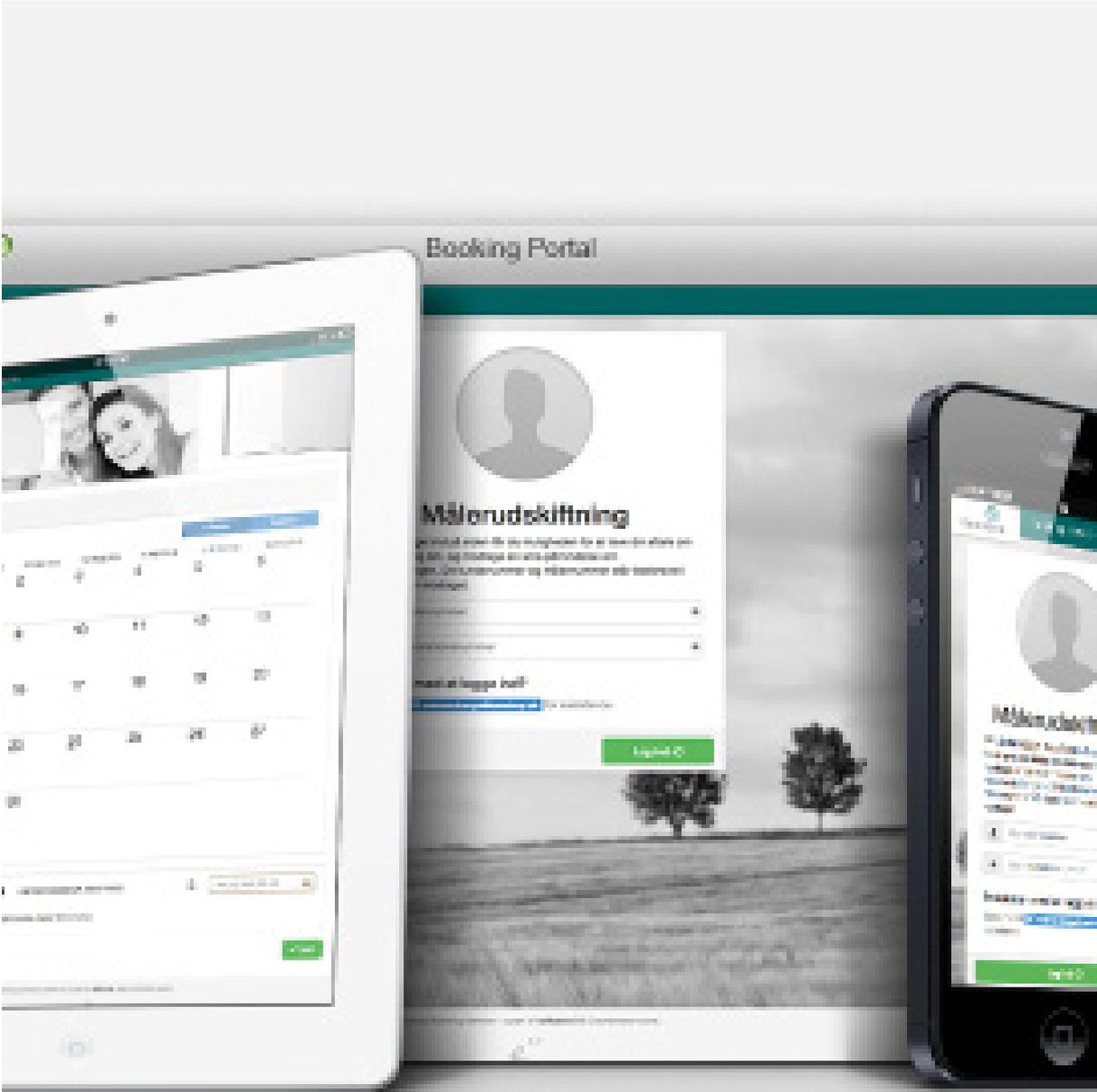
Split/merge blocks to create equally sized chunks where possible. Merge target 100 tasks/block.



OPTIMIZED ROUTE

Create optimized route based on "greedy" algorithms and heuristics. Each task has a position and tentative start/stop time and may be imported into Blå Coordinator.





BOOKING PORTAL, LETTER & SMS REMINDER.



COMMUNICATING WITH

END CUSTOMERS

Blå Coordinator™ Booking Portal with SMS reminder is an efficient way to communicate with end customers.

The automatic letter generation, rebooking portal and sms reminder is an efficient way to communicate with the customer that complements the call center.

Notification letter

Based on the data from the customer information system and the pre-planning a letter is automatically created stating the contact to the call center, the time slot in which the work order is planned, a reference on how to rebook the work order using the booking portal and information about sms notification.

Appointment booking

In the Booking Portal the end customer can select a new appointment time based on the actual booking situation in that area. The possibility for re-book is closed two days prior to the planned booking.

SMS reminder

At the online re-booking site the end customer can register his/her mobile phone number in order to receive reminder of the booking.

The notification letter, the business rules for the end customer portal and the sms notification can be customized for different customers.

THE PROCESS BEHIND

WORK SCHEDULING

For the meter roll-out different type of job scheduling can be used. It is possible to begin with manual scheduling and successively upgrade to more advance scheduling support.

Manual scheduling

The manual scheduling/dispatching is supported with a graphical UI where drag-n-drop can be used.

The meter exchange orders can be assigned to a specific resource or automatically assigned to a pool where the resource can pick the order.

The strategy for dispatching can be configured in the system, i.e., whether it should immediately be dispatched when assigned or not.

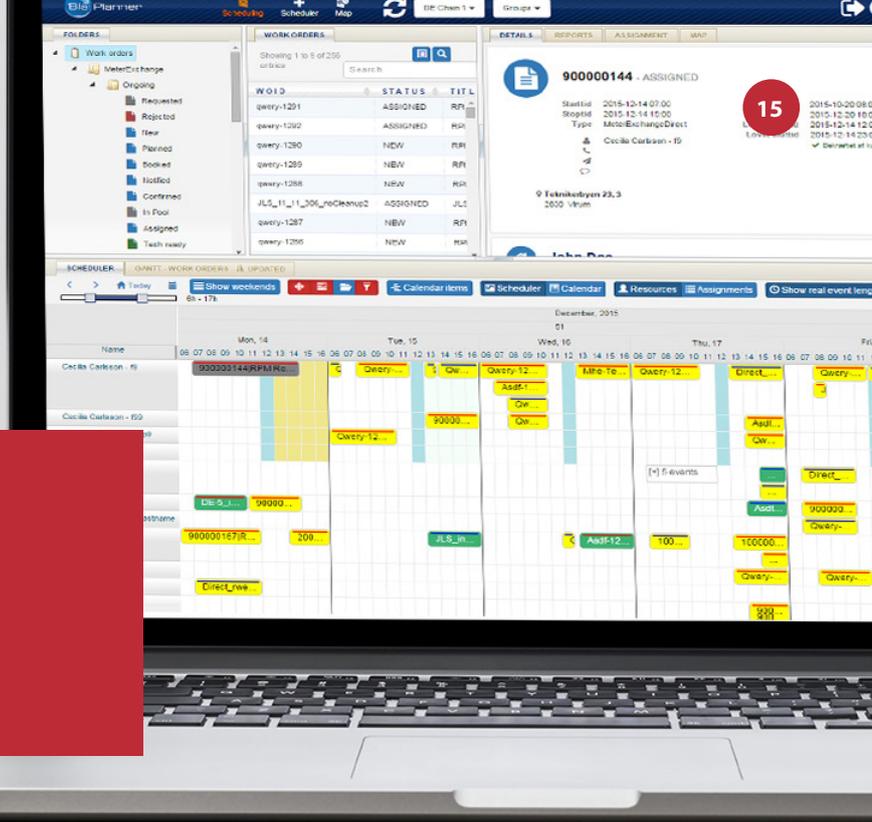
Automatic work scheme optimization

In order to support more efficient scheduling isMobile has developed Blå Optimizer that solves the general optimization case for field service scheduling. The optimization engine has been designed to be fast enough for interactive use and still be able to produce optimal or as near optimal solutions as possible.

Since the actual optimization support is dependent on specific parameters for each service company, the optimization support is developed as a plug-in that can be adapted and developed in a separate project.

Technicians within a resource group or a cleanup group can pick jobs from the meter exchange order pool, listed in the mobile client.

POWERFUL PLANNING AND SCHEDULING TOOLS



Blå Coordinator

Blå Coordinator supports on-line collaboration between back-office personnel, customers and mobile staff. Direct information of work orders and details in each work order makes it easy to co-operate and share actual information.

Blå Cockpit is a base-component in Blå Coordinator providing a graphical interface for planning & dispatch of work orders for mobile staff.

The Blå Cockpit provides managers and work schedulers with continuous information of everything happening in the field important for decision making.

It provides work order calendars, assignment calendars, resource calendars and combines this with real-time work order/assignment/resource information.

Major Functions

- Graphical work schedules for all employees
- Create appointments
- Easy manual scheduling
- Call Status Indication
- Create external request
- Decision support for scheduling
- Real-time optimized scheduling
- Auto pilot
- Actual availability
- Intelligent message handling
- Map-based information
- GIS information related to service objects
- Route-calculation
- Handling of multimedia documents

WORKING IN

THE FIELD

Advanced Mobile Clients with Off-line support.

Mobile clients

An important part of the meter roll-out process is to support the technician exchanging meters efficiently. The solution is based on standardized Smartphones or Laptops, using GSM, 3G, GPRS, WLAN, LAN network technology. The mobile clients can be supported by different clients, as a installed client on **Android** (Blå Android), **PocketPC** (Blå Pocket), **Windows Phone 8** or as an installed client on a **Laptop** (Blå Dashboard).

The installed clients support a combined real time **online and offline working** situation where assignments can be automatically downloaded to a local storage making it possible to work if network coverage would be lost.

The dispatcher is always informed about actual status of meter roll-out performed and the process is time stamped.

The mobile user can browse through detailed meter roll-out information and use Google maps to navigate to site. Work order specific information like old meter number, address, location, customer information, etc. is provided on the mobile client based on the configuration for meter roll-out. It is also possible for the user to print information using mobile printers.

It is easy to add customer specific report forms with checklists, digital signatures, date box, etc. The reporting also includes possibilities for advanced validation of data either locally on the client or towards back-end systems.

"The solution provided by IBM and isMobile has proven to be a powerful tool for us. The optimization delivered by the solution is among the best we have seen."

IT-director at one of our customers



DATA CAPTURE FOR

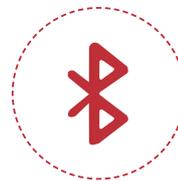
METER EXCHANGE

The meter roll-out temple has predefined report to capture information/photos about the old and new meter



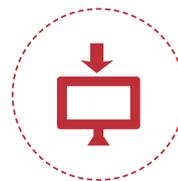
MEDIA DOCUMENTATION

Technician photo and video documentation.



PROBING OF SMART METERS

ANSI C12.18 protocol via optical interface, Barcode scanning, Label printing.



MEASURING INSTRUMENTS

Testo measuring instruments e.g. *340 Flue Gas Analyzer*.

CREATING CUSTOMER REPORTS

Operational Reporting

Real Time Reporting – In Blå Cockpit it is possible to see the status and progress of orders in real-time as well as summary of the situation in a team regarding number of work orders in different status. For the smart meter roll-out project this gives valuable information about the pre-planning situation, notification situation, status of re-booking, progress by technicians, amount of rework and the

number of completed work orders.

Detailed Information – For all orders it is possible to drill down into the information to see details about progress. It is also possible to export information to Excel or pdf.

Flexibility – By setting up different Blå Cockpit configurations the user can create unique configurations for different scenarios.

Follow-up Reporting

Any data that exist within Blå Coordinator can be stored in the Blå Coordinator KPI database. This information can then be used to create customized reports within the framework of Blå Coordinator or used by third party tools like SAP BO, Excel, Cognos and QlikView.



Operational report



Follow-up report



BENEFITS

No upfront investment
Flexible capacity
Speed & Agility



SUITED FOR

Smart metering roll-out
Outsourcing
Smaller service organisations



CUSTOMER NEEDS

Full suite of softwares components
Combine modules

RUNNING BLÅ COORDINATOR AS A

CLOUD-BASED SERVICE

Blå Cloud is based on isMobile's well proven Blå Technology, made available in a cloud-based model.



isMobile uses **Amazon Web Services (AWS)** as the platform for cloud services as the primary option.

The great flexibility in capacity, reliability and security in AWS provides an excellent platform for implementing a business critical Mobile Workforce Management solution.



SMARTER. HUMAN. AGILE.

The world needs an enterprise with an entirely new approach to workforce management.
isMobile is that enterprise - creating a Smarter.Human.Agile service.



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