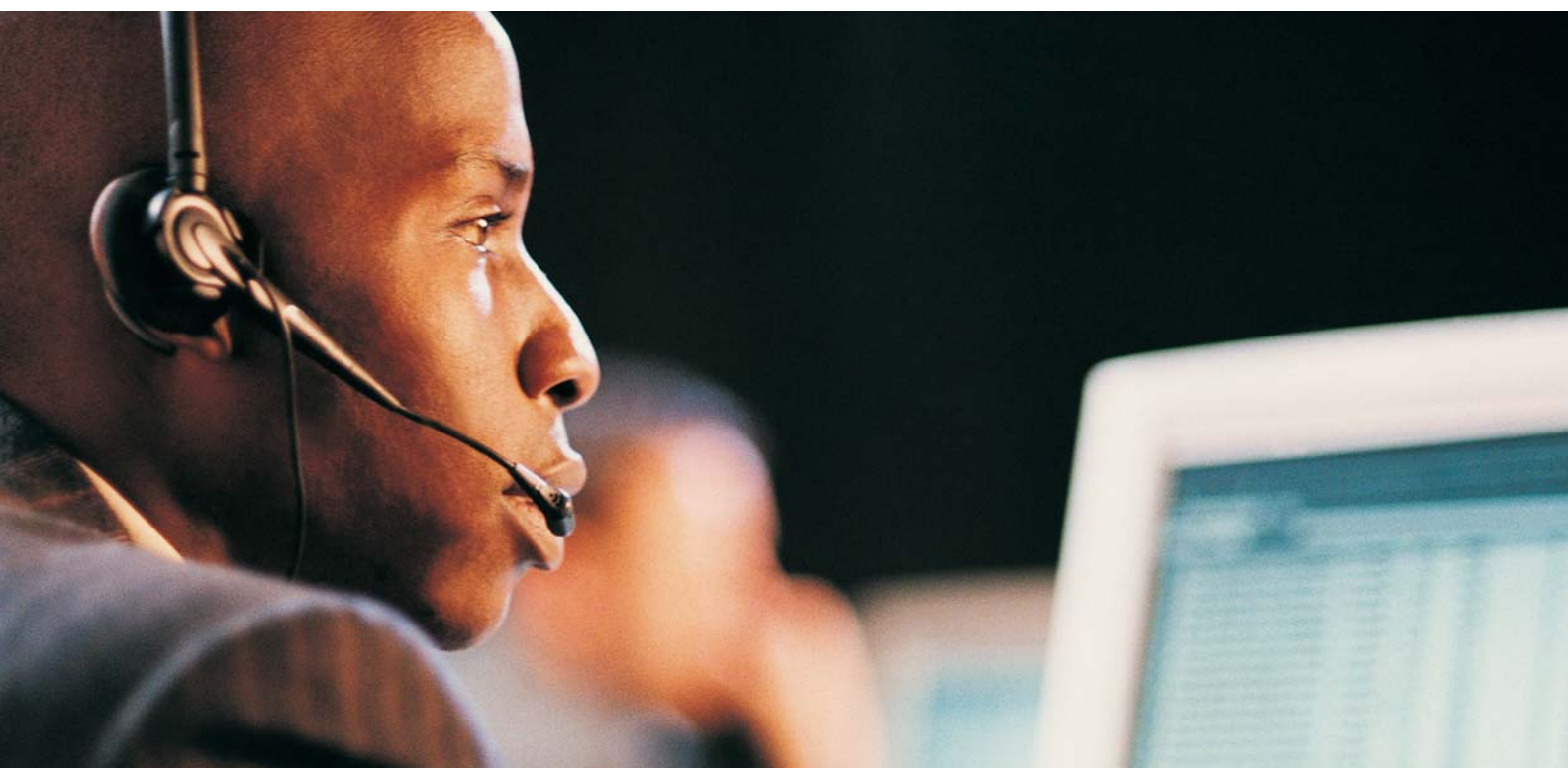


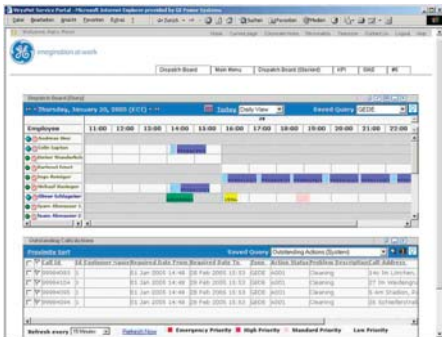
GE  
Digital Energy

# Field Force Automation

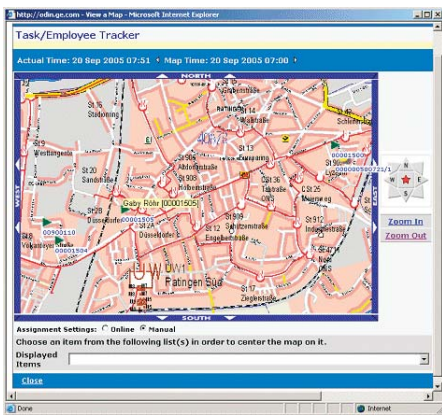
Optimizing Field Operations for Network Facilities



imagination at work



overview



map

In today's competitive environment, network companies are under constant pressure to improve customer service while reducing costs; in field operations this drives a necessity for utilities and communication businesses to optimize resource assignment and dispatching.

GE Energy's integrated solution suites for network companies includes Field Force Automation (FFA), a comprehensive software application combining proven, optimal resource management and superior street routing. In addition, FFA software's powerful integration capabilities and use of standard protocols can improve field services by enhancing and automating business processes across a variety of work management and corporate systems. FFA delivers significant efficiencies and cost savings to technical field service teams within large and small organizations.

FFA streamlines the flow of work orders throughout the entire organization, including creation, assignment, dispatch, monitoring, field activity reporting, and charge accounting for activities such as:

- Inspection
- Repair
- Maintenance
- Outage restoration
- Meter reading
- Service installation and testing
- Trouble call response

As field-based work progresses, status updates are returned to the source system, ensuring that all members of the organization are updated and ready to provide customers and co-workers with timely, accurate information.

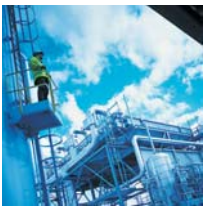
FFA also promotes better communication between dispatchers and field teams by providing technical, commercial and spatial information. Data is more accessible and reliable and FFA reduces the amount of voice communication required to only the essential emergency information, minimizing dispatch room disruption.

Easily accessible to senior managers, dispatchers and service technicians, FFA is supplied with a configured Internet portal, providing optimized field operations via the Internet.

#### FFA Product Description

The three major components within the core package of FFA are:

- Resource planning that lays the building blocks for effective scheduling:
  - Stores individual and crew employee calendars, start/end work location, organizational structure, skill set, wages, preferences, and equipment held
  - Models workforce shift/rotation, holiday, illness, training, and overtime considerations
  - Analysis of company policies and collective agreements affecting staff deployment
  - Full support for multi-person crews and individuals required for a specific task
- Optimized scheduling differentiates FFA by combining resource intelligence, planning, and modeling with advanced street level routing:
  - Schedules resources using manual, automatic, and semi-automatic modes with heuristic algorithms
  - Automatic, optimal selection of materials and workers based on complex resource analysis, including advanced real-time analysis such as proximity and equipment of currently deployed crews
  - Optimized routing, beyond point-to-point distances, with street level information, such as:



- One-ways
- Average speed
- Traffic signals
- Real-time information (if available) such as traffic flow, accidents, closures, etc.

- Dispatch management delivers optimized crew deployment with these abilities:
  - Web-based dispatch board and Gantt chart—dispatcher has full control from calendar management to technician login/logoff
  - Track employee tasks on dispatch board with map-based dispatching and GPS/AVL updates
  - View overall operations or detail on work and mobile workers
  - Alert dispatchers to priority events
  - Automated work status updates

### Flexible, Automated Scheduling

Automated scheduling in FFA is achieved by defining rules that can take into account:

- Personnel training and qualifications
- Individual responsibilities
- Each team's material and equipment
- Rapid response
- Crew proximity
- Other business-specific factors

With FFA, the dispatcher can overrule the automatically generated schedules and add or prioritize work orders manually. In order to accommodate prioritized unplanned work orders, automatic re-scheduling of low-priority tasks is also available. This is essential, when, for example, a SCADA system generates emergency or higher priority tasks than those currently being scheduled or dispatched.

Configuration of user-defined alarms or notices ensure the dispatcher is instantly aware of any issues and can take relevant actions, rescheduling work orders if necessary. For low-priority routine maintenance tasks, the workflow engine provides configurable workflows for automating the specific processes.

### Field Force Automation Mobile

Field Force Automation Mobile is available separately to tap into FFA's mobile gateway, taking the application to the field on a variety of mobile data terminals. FFA Mobile allows the secure, wireless transfer of work orders and updates to and from the field organization and among crews. The field teams are connected through mobile devices that can be used for feedback regarding order acceptance, current status and estimated time to completion, thus enabling an up-to-the-minute view of work in progress. FFA Mobile also provides the following advantages:

- Guaranteed store and forward functionality—queuing data when devices are without coverage until the signal is restored. This allows mobile users to work in both on-line and off-line modes without interruption.
- Compatibility with most browser-based systems operating over radio and cellular communication networks through FFA Mobile's use of standard Windows®-based operating systems.

### Integration with Key Enterprise Systems

FFA is designed as an open system enabling additional functionality to be added through customization and business process integration with GE's Smallworld™ product suite, other ERP products, work management systems, and geospatial information systems.

The Field Force automation solution seamlessly integrates with SAP™ through the Smallworld Business Integrator™ 4 for SAP® R/3™ (SBI), further maximizing your investment in ERP. For further detailed information, please refer to the "Field Force Automation for SAP" fact sheet (GEA-14522).



## Features

- Automate work order lifecycle from design through project completion
- Manage all levels of work orders with an intrinsic hierarchy that supports projects, service orders, work orders, actions, and routine and emergency events
- Includes street-level routing database
- Flexible scheduling to include completely automated, semi-automated, and manual operations
- Ability to integrate to other work order generating systems and enterprise systems – CIS, OMS, WMS, EAM, ERP
- Collect work order status in real-time
- Manage jeopardy and keep alert of workload imbalances
- Offer real-time appointment booking with configurable window times

## Benefits

- Reduce dispatch times associated with manual crew assignment by 33%
- Cost savings from 25-35% on overall field operations, recognized in as few as eight months
- Improve operating efficiencies by reducing the number of dispatchers necessary to handle high volume situations (storms, events)
- Decrease emergency crew personnel deployed by as much as 15-20%
- Reduce radio and phone traffic for system operators performing system updates that crews can perform directly
- Improve the quality of reliability data by reducing voice communications necessary and establishing a single point of data by central dispatchers
- Increase customer satisfaction due to more timely updates of restoration status
- Eliminate the complexity and high cost of acquiring and maintaining point software products from different vendors and performing custom integration

## System Requirements

### Operating System Support:

Windows® 2000 SP3 or SP4  
Windows XP ProfessionalSP1a  
Windows 2003  
Linux® RedHat 3  
Aix® 5.2  
HP-UX™ 10.2  
Solaris™ 8

### Application Server:

IBM WebSphere® 5.1  
SAP NetWeaver® Release 6

### Database:

Oracle® 9i and 10i

### Browser:

Microsoft Explorer® 5.X with Microsoft JVM or Microsoft Explorer 6 with either Microsoft JVM or Sun JVM 1.4 or 1.5

### Mobile Devices:

**On-line only:** All WML, Docomo, and HTML devices

**On-line and Off-line:** All Microsoft Windows Platforms and Blackberry platforms with NSIcom Cr-EME JVM release 3.x or 4.x

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