

# 10 questions to ask when evaluating your next field workforce planning and scheduling solution

Not all workforce scheduling solutions are created equal. Discover the top 10 questions asked when evaluating solutions to ensure it delivers maximum value to your business.



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Optimal scheduling in  
real-time with IFS

# Barriers to service success

For many companies, service revenue is a key driver for growth. Yet despite this, too often organizations are constrained by the lack of skilled field technicians they can recruit and the complexity of day-to-day planning for field resources, parts and inventory.

Whilst automated workforce planning and scheduling solutions can offer valuable orchestration and efficiency improvements, not all solutions are created equal. All too often our consultants talk to service planning and dispatch teams using systems that are clearly delivering minimal value. Recurring system issues we see include:

- **Limiting factors prevents a holistic plan**  
Scheduling and planning systems typically provide a view of engineers' calendars and availability and make recommendations for schedules. But the actual process can still be very manual because the system considers only a limited set of factors and constraints. If key considerations are often overlooked, optimal planning decisions are not made. As a result, planners are forced to manually override the system inflexibility.

On some systems it can be very difficult and time-consuming to make changes when there are exceptions to deal with. As a result, planners often find it faster and more expedient to revert to former manual approaches.

- **Batch scheduling hinders real-time business**  
Optimization may run only at certain time periods or overnight (batch process), generating a schedule which is not synchronized and updated with events in real-time. This makes it very hard for planners to book and manage appointments, and, without a real-time view, impossible to manage in-the-moment changes like re-scheduling for cancellations dynamically.

The following ten questions were asked in our recent Webinar, 'How Electrolux put dynamic scheduling at the core of their quest to customer centricity' and illustrate considerations we are commonly asked about by teams who are evaluating planning and scheduling solutions. These questions and answers are aimed to help businesses understand the full capabilities of a best-of-breed scheduling solution, help define and scope the specific needs of your business and demonstrate how a leading global brand is taking these capabilities and applying them to their own business.

Are you curious about how Electrolux Group achieved customer-centricity through dynamic scheduling of their field workforce?

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The tool that we started using in 2018 had some kind of optimizer, but it was difficult to make changes: in fact, it was just faster to do it manually. Also, the tool was not flexible enough and we couldn't set parameters that would improve our resource planning. It proved easier to not use the tool and instead do manual resource planning. Eight months after we went live with this solution, we started on a new project to find a planning and scheduling solution which would deliver value.”

Electrolux Europe, prior to the deployment of planning and scheduling optimization from IFS





# Question 1 - What factors and constraints does the scheduling and planning system consider when calculating the optimum schedule?

Planners must take account of many factors when calculating effective schedules. Typical variables include:

- ✓ Technicians who have different skills, experience and certifications
- ✓ Staff that work in shifts and need breaks, who may work flexible hours
- ✓ Jobs requiring tools, equipment, vehicles, parts, and consumables, all of which must be coordinated
- ✓ Complying with regulations stipulating when jobs must be done, how they are performed and who can perform them
- ✓ Prerequisites and dependent jobs: other tasks that must be completed first before a specific task can commence
- ✓ Balancing the cost-of-service delivery with achieving contracted SLAs
- ✓ Adjusting schedules to accommodate urgent service visits alongside preventive and long-term work within industry or regional regulations

On scrutiny, even seemingly simple practical requirements can be significantly more complex than expected. For example, a planner must reconcile the cost versus the value of visits, taking into account complex service level agreements (SLAs). To plan optimal routing requires data about distance travel time, traffic congestion, vehicle speed and fuel efficiency. In the case of electric vehicle fleets, routing must also factor in the vehicle range between charging, and access to charge points in the field. Ensuring the availability and location of parts to complete scheduled jobs is critical. A system must reveal when parts are in stock for vans, or when parts must be sourced via the supply chain and sent ahead to the site or field technician.

# How to simplify factorial-scale complexity

Factoring in all these variables side-by-side is no trivial task. As more variables are added to a scheduling problem, the number of possible solutions grows factorially – that's greater than exponentially. Even for a small team of five engineers performing 70 activities a day, there are googol possibilities (that's 10<sup>100</sup>).

Clearly, finding the optimum balance of cost-effective operations, productive satisfied employees and exceeding customer expectations requires a powerful tool.

First launched in the 1990s, the latest iteration of planning and scheduling optimization from IFS is the result of more than 100-man years of development.

Featuring an AI engine with real-world learning drawn from 20 years' experience optimizing scheduling for service customers. To manage this complexity, unlike other systems, over 40 algorithms provide the capability and logic to analyze thousands of resources, factors and constraints to compute the right resource, for the right job, with the right part at the right time.



# Question 2 - Can the system handle jobs that need multiple resources with differing skills and have a longer duration than a single day?



Many jobs, particularly longer project activities like installation and commissioning projects, may require more than one technician to complete. Certain tasks may require a specific or specialist skillset, and there may be multiple dependencies – for example an electrician can only start once the plumber has completed their part of the job.

Most scheduling and planning tools cannot handle multi-resource, multi-day work. This means that even if a planning tool is being used, there is a lot of manual processing and decisions for the planning team to make. The ultimate plan will not be as efficient as it could be.

In contrast, planning and scheduling optimization from IFS can optimize crews and project multi day work in combination with operational planned maintenance and real-time break fix activity, enabling planning teams to transition from multiple spreadsheets to forecast in an all-encompassing strategy.



### Question 3 - Is it possible to have a customer booking system that suggests the best times for appointments? Does the resource planning model also integrate appointment booking (where customers book a specific slot that is available)?

Businesses typically have a mix of appointments, planned maintenance activity and reactive break/fix work. Appointments must seamlessly integrate with other work types. Best of breed systems like the IFS solution integrate appointment booking and offers available appointment slots based on the existing work, and rank or score available slots based on:

- 1** The cost to perform (pricing logic)
- 2** Slot differentiation based on type of work / customer / contract
- 3** Incorporation of reactive work that aligns with utilization rules on shifts and slots
- 4** Displacement of existing, low priority work as needed
- 5** Premium versus standard services based on job type constraints, including same-day appointments
- 6** Overlapping appointment slots

These best practices ensure potential appointment times are calculated and ranked based on 'cost to perform' and 'value to the business' and can be offered for booking via a customer service agent or directly via a portal.

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The resource planning does integrate with appointment booking. When customers request an appointment, they are offered an available slot. The systems grades available appointments in terms of efficiency for the business, so although we do give consumers a choice, we try and guide them to the most efficient slot for the business.”

Electrolux Europe, deploying IFS Planning and Scheduling Optimization (PSO)





## Question 4 - Can you schedule jobs or offer appointments based on spare part availability?

The biggest cause of low first-time fix rates is the lack of part availability to successfully complete the service visit. For many planning and dispatch teams, checking if technicians have the correct parts in van stock or managing orders and spare parts deliveries can be a massive headache. The planning tool can ensure that the right engineer is dispatched and can manage their routing; but if they don't have the correct part in van stock to resolve the issue, then a repeat visit is required.

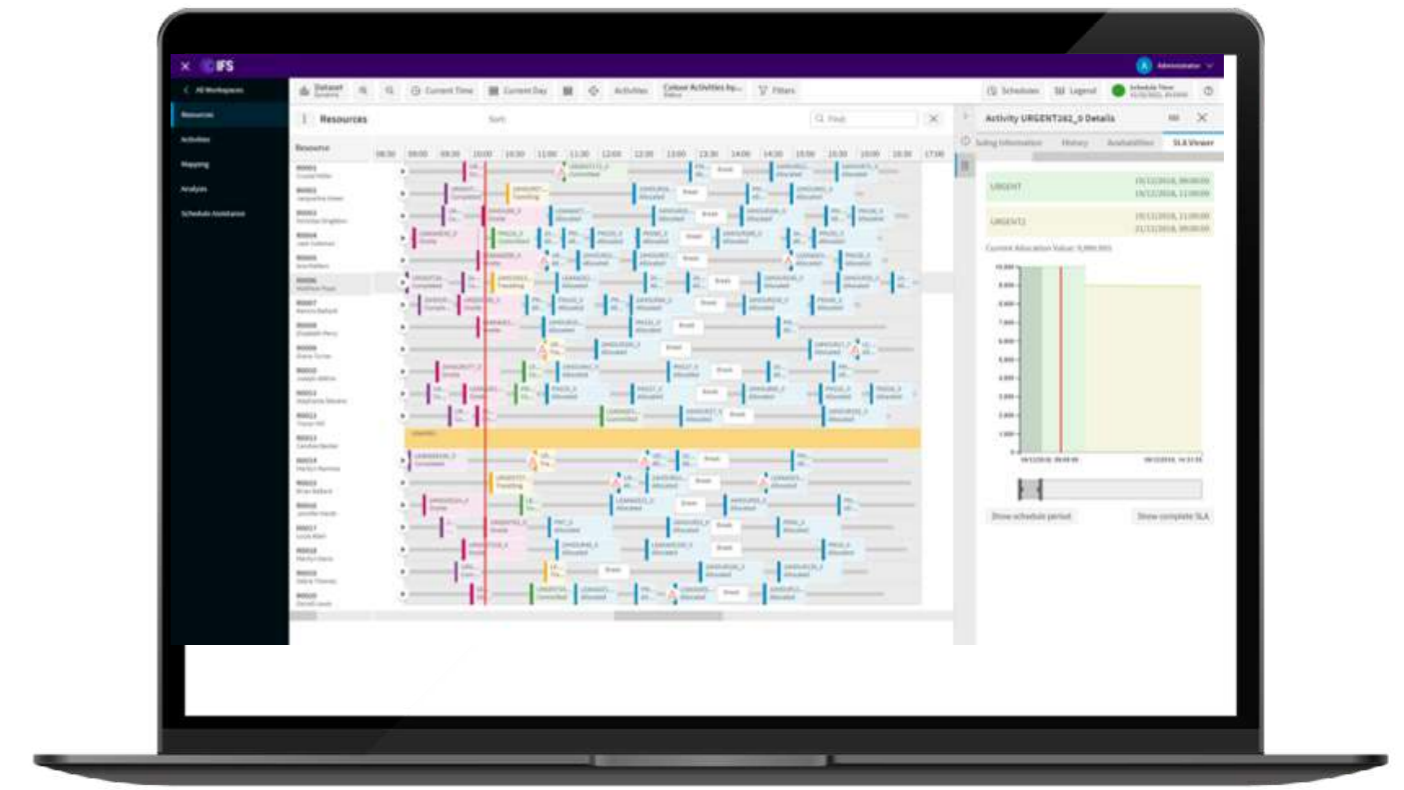
The IFS solution is to synchronize the part event with the person (technician) event and will monitor the engineer's van stock to ensure they have the parts before the job is assigned. Alternatively, it can dynamically generate a part pickup event as a point along the route of the engineer

to ensure they arrive at the job with the part on their van. It's the only scheduling engine that can optimize people and parts. Another option is to have the part shipped directly to the customer site. The scheduling engine takes this into account and schedules the technician's visit to coincide with the part availability.

IFS also delivers a predictive parts capability, analyzing parts usage and typical failure scenarios for assets to optimize spare part inventory. The system will look at the history of former similar job tickets which have been resolved, and the parts used will appear for the planner, suggesting what will be required for each job based on asset.



# Question 5 - On average, how many visits/tasks per day per worker should you have for the IFS solution to create significant value?



With the IFS planning and scheduling solution benefits clearly scale when the system is applied across larger (250+) field service teams and high appointment levels, applying it to low-volume field service scenarios can also add significant business value. For example, global packaging leader and IFS customer Tetra Pak is creating business value despite each engineer visiting only one or two customer sites each day.

In this case, the business case isn't around route optimization or reduced travel. Instead, it results from the volume of complexity that planning and scheduling from IFS automates for the planning department. By ensuring the most appropriately skilled worker with the correct parts is tasked, also taking into consideration other activity that the team is undertaking. The risk of failed first-time-fix service events due to poor planning is reduced, and the customer experience is improved.

Additionally, automatic optimization provides the decisioning ability to, where appropriate, suggest when a reactive break-fix call out could also fulfill an imminent scheduled preventive maintenance appointment in the locality.

In both high and low volume scenarios, IFS offers a Business Value Assessment to clearly quantify the expected benefits from the planning and scheduling solution.

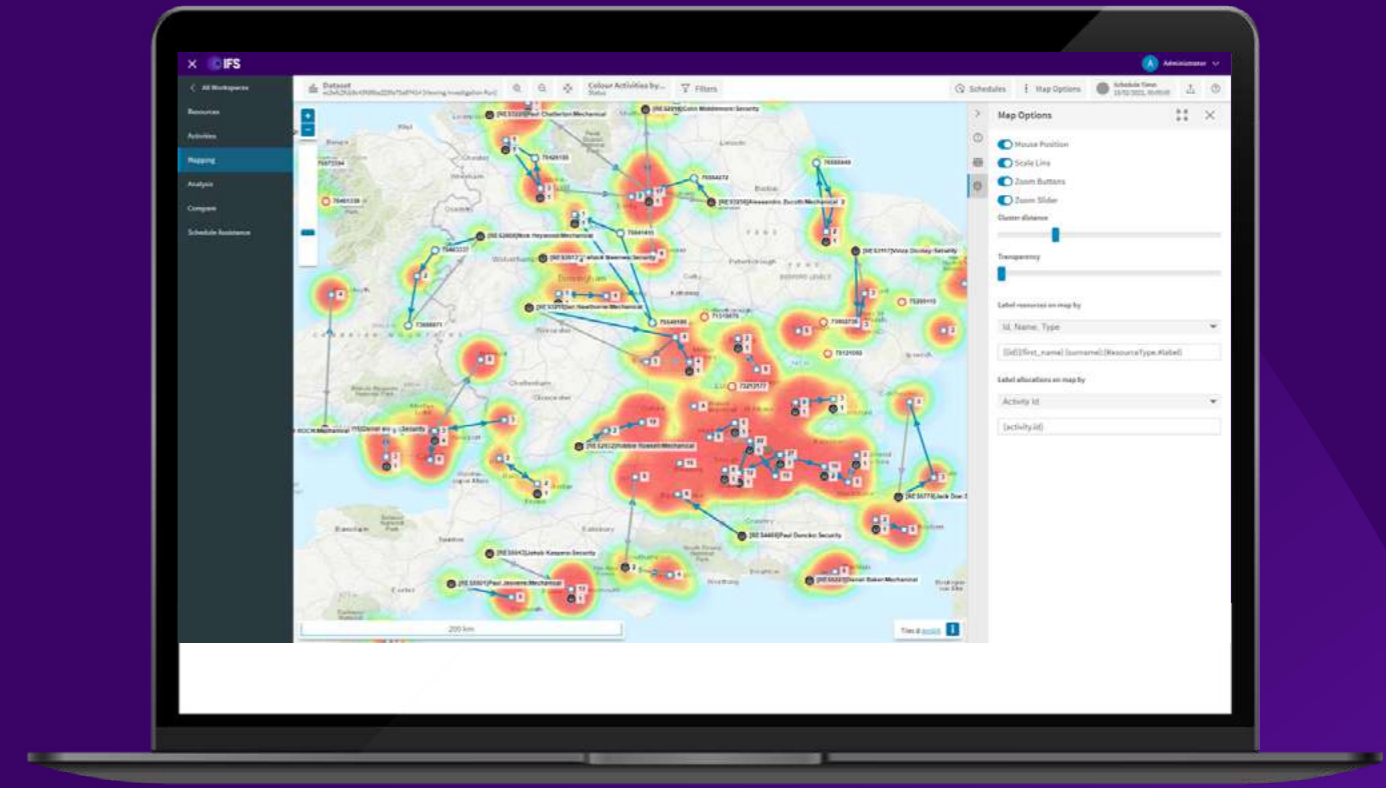
## Question 6 - How does the optimizer work if a technician gets a lengthy delay at a job? Or traffic that means they won't be able to attend subsequent jobs? Or they call in sick? What happens when customers cancel appointments?

Planners have a schedule for the day; but any adjustments need to be made – for instance because of technician sickness, delays, job overruns or customer cancellations – normally a planner must manage manually. Making this decision requires assessing myriad different factors. Not only does this take time, but the optimum decision is very rarely made.

By providing dynamic, real-time scheduling automatically, IFS removes the time and stress of manual guesswork. Our schedule optimization will simulate and evaluate the huge number of different options in real time and deliver the optimum solution, freeing up the planning team to manage any considerations around the change – for example calling the next customer to let them know that the engineer may be coming earlier.

Many traditional scheduling automation solutions rely on heavy optimization at night, or scheduling at intermittent periods during the day. This means that as events unfold, they may not be accurately reflected because a system cannot manage changes in real-time.

### The power of always on optimization



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The optimizer that is part of the IFS tool is constantly running. It reacts to each change that occurs – for instance a technician that falls ill, a consumer canceling an appointment, or even when a job takes a shorter duration than initially planned. This constant optimization was a game-changer for us and makes life for resource planners easier.

Another big benefit our planners have seen is gap-filling. For example, if a job is finished early, or if a consumer cancels an appointment, the IFS tool finds other work to fill the engineer's slot. Here, the optimizer can automatically re-allocate subsequent jobs according to business priorities to resources who have the correct skills/equipment. Planners need a real-time system that can react in minutes, not hours. This is where the importance of AI-powered optimization, as used in IFS, truly shines, scheduling plans in fifteen minutes that other systems might need overnight to compute.”

Electrolux Europe, deploying IFS Planning and Scheduling Optimization (PSO)



## Question 7 - As a resource planner can you manually override the system?

Exceptions will always occur, and manual exception planning is an essential capability within any automated system. Thanks to Artificial Intelligence and machine learning, the IFS solution is essentially self-learning. Whenever resource planners intervene and make a manual change to the schedule, the system remembers the scenario, constraints and the changes, and applies the new learning to logic algorithms going forward.

Moreover, by exploiting Explainable AI (XAI), the optimizer will explain to planners the reasoning behind automated decisions the system makes. With this decisioning insight, where needed parameters can then be adjusted, further improving performance to automate a similar exception scenario in the future.

## Empowering dispatchers with IFS Workforce Planning and Scheduling



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My job changed completely from daily making manual planning to complete exception handling. These exceptions are highlighted in different IFS dashboards and, as a resource planner, I can easily do manual interventions. This capability quickly resulted in a significant decrease in travel by all our technicians.”

Electrolux Europe, deploying IFS Planning and Scheduling Optimization (PSO)





## Question 8

### - Can the solution handle hard and soft constraints?

When automating plans and schedules, every business will set certain parameters for the system. Some are non-negotiable 'hard' constraints – rules that cannot be broken; whilst others are 'soft' constraints – adjustable parameters and preferences that can be considered when optimizing plans. Examples of both would be allowing a customer to nominate a specific engineer to attend, but placing a limit on the extra driving time that may be required.

The IFS solution uses service margin data – the value of an activity vs. the underlying cost – to model decisions. Schedules are continuously optimized, while also complying with the specific hard or soft business constraints configured for that business including:

- Skills, proficiencies and preferences
- Parts, tools, and capacities
- Availability of engineers with flexible overtime constraints, customer sites and equipment
- Travel and geography constraints such as road network, travel restrictions and flexible regions
- Timing parameters such as locations add-times, real-time updates on traffic and technician GPS
- Complex work constraints such as multi-person, multi-sequence, and multi-day types of work

By accommodating a degree of elasticity around soft constraints, the IFS solution provides superior results and increased automation by avoiding hard constraints, for example lost productivity due to inflexible overtime rules.



# Question 9 - We use a lot of contractors. How do we manage activities assigned to them and track their time spent on the job?

Many organizations use contractors instead of their own employees for certain geographies or types of work. This requires the ability to assign jobs and track activity and time/cost spent on each job. Most scheduling tools do not provide a solution for subcontractors so either these jobs are managed manually or customizations are required to build a solution.

IFS offers various methods to schedule subcontractors and track their work execution - primarily our customers have two options to choose from: individual resource scheduling or bucket scheduling.

In the case of individual resource scheduling, each subcontractor individual is optimized and treated as a separate resource. This approach is ideal for staff augmentation scenarios where subcontractors are treated as individual contributors. On the other hand, for bucket scheduling, we manage subcontractors as a collective resource with a shared capacity to perform work.


This method allows for better management of subcontractors as a unified group.

Once the scheduling is determined, the subcontractors themselves are responsible for carrying out the assigned tasks. For individual subcontractor resources, they have the option to report through IFS portals or IFS native mobile apps, providing real-time feedback on the progress of their work. For the bucket resource scenario, subcontractors can report their progress to us using contractor coordinator portals or direct API integration for larger contractors.

Overall, IFS provides flexible solutions to effectively handle subcontractors, offering different scheduling modalities and reporting mechanisms to ensure efficient management and accurate tracking of their activities

Download our industry whitepaper on Integrating subcontractors into your existing service model





## Question 10 – How can I build a business case that proves the value of investing in a planning & scheduling solution?

Evaluating technology as part of service transformation is a complex task – let alone proving the value that a new software solution will bring your organization. Presentations and demos from multiple suppliers are great, but at IFS we understand the importance of building a solid business case, with demonstrable value, that you can confidently report back to your peers. That's why at IFS we can offer you a Proof of Value.

By engaging with this process, we can normally demonstrate on average an immediate 20% improvement on KPIs.

### Just 1 hour of your time to gain real business value insight

All you need to do is extract a sample of your business data from your system for us to import into our scheduling system.

We then consider the adjustable parameters for greater efficiency such as travel, resources and tasks and calculate the main service KPIs: SLA adherence, overtime used, mileage and effective working time ratio.

Then it's time to optimize your data – showing what other routes and distributions would have been possible. This allows us to calculate the potential savings from the reduction of SLA slippage, mileage, overtime and non-productive time.

Not only this, but we can apply our 'What If Scenario Explorer' – an advanced predictive analytics tool that provides answers to tough capacity forecasting such as how a large reduction of workforce or a large increase in workload will affect performance, or what number of resources are necessary to achieve a specified performance against a specified demand.

## About IFS

IFS develops and delivers cloud enterprise software for companies around the world who manufacture and distribute goods, build and maintain assets, and manage service-focused operations.

Within our single platform, our industry specific products are innately connected to a single data model and use embedded digital innovation so that our customers can be their best when it really matters to their customers – at the Moment of Service™.

The industry expertise of our people and of our growing ecosystem, together with a commitment to deliver value at every single step, has made IFS a recognized leader and the most recommended supplier in our sector. Our global team of over 5,500 employees every day live our values of agility, trustworthiness and collaboration in how we support thousands of customers.

Learn more about how our enterprise software solutions can help your business today at [ifs.com](https://ifs.com).

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