



# Your Engineered-to-Order Modular Process System in 6 Easy Steps

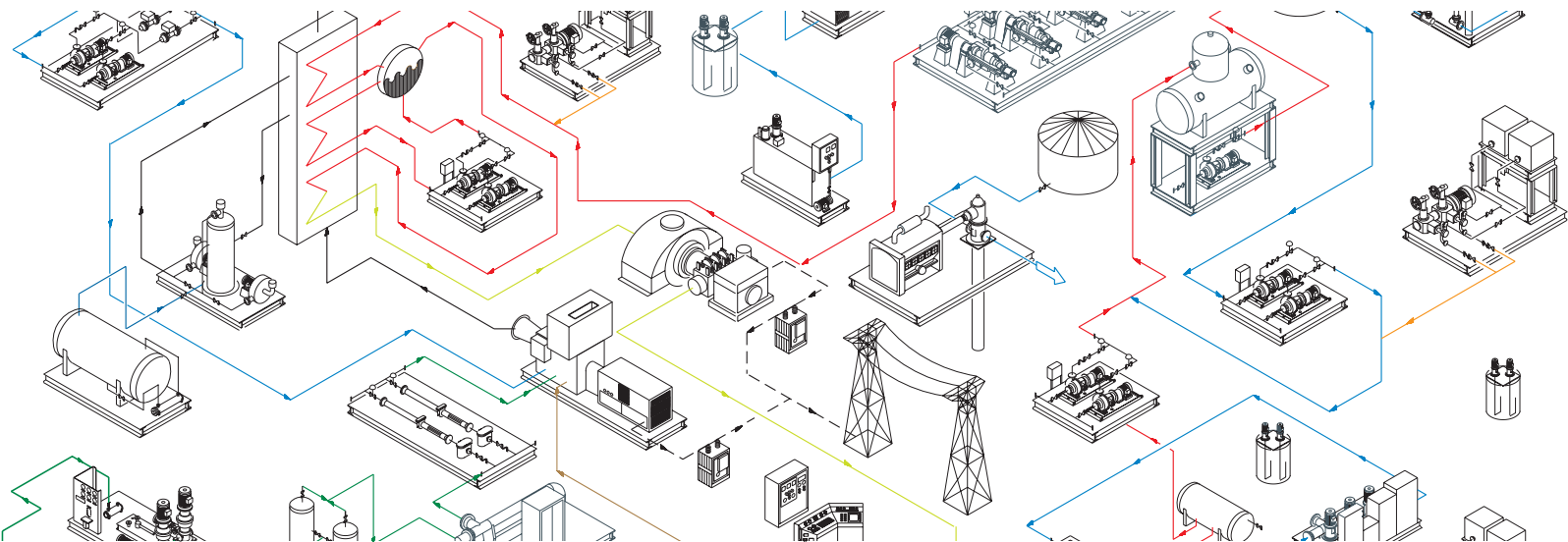
Discover how an IFS Modular System saves time and money while improving safety and functionality.

# INTRODUCTION

There are plenty of reasons to select a modular build process instead of a traditional “site built” construction method when upgrading plant processes and systems — cost, quality, reliability and ease, for example. But did you know simplified and streamlined implementation also tops the list?

At Integrated Flow Solutions, LLC (IFS), we design modular liquid and gas process systems that are fully optimized, engineered-to-order and delivered ready to “plug into” your existing process flow. When you work with IFS, you’ll work with a team specifically assigned to your project. No missed handoffs, no faulty design, no on-site hassle. And with IFS, your skid-mounted module is operational 25 percent to 50 percent faster than traditional processes.

To learn just how time- and cost-saving the IFS Modular System process is, let us walk you through the six steps to completion, from inception to training. Using this guide, you’ll be able to anticipate construction expectations, learn more about IFS quality control measures and discover how modular fabrication streamlines normally time-consuming processes.



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We know systems upgrades are a large-scale investment. When choosing IFS, you can rest assured that our experts have thoughtfully considered how to maximize the workflows of each step. Explore the six steps of our implementation process to find out how our processes run, what specific areas IFS focuses on and what to expect from your own implementation.

IFS services don't stop at implementation, either. Explore our post-purchase maintenance support on page 7 to discover how our field experts continue to support you throughout the lifecycle of your IFS module.



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# 1. LAUNCH PHASE

Before beginning the planning stages of a packaged modular process system build, an IFS team will meet with key stakeholders from your plant to determine what specifications to build to. IFS brings 38 years of experience to the table, honed-in on the oil and gas (upstream, midstream and downstream), power generation, LNG and air quality industry sectors, including gas process systems and nitrogen generation systems. Working with you, we'll design a module specific to your facility and needs.

After outlining your project specifications, we use Aspen HYSYS, the energy industry's leading process simulation software, to conceptualize and design your modular solution. By improving engineering productivity, this process simulation software helps reduce time spent both in the beginning stages and in the design and build stages. Throughout the launch process, frequent and effective communication means your team always has the information it needs to make informed decisions throughout the process. Your IFS team will design a project plan and determine a deadline based on what works best for you.

## IFS Launch Phase goals:

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Create a unique modular process system design centered on reducing energy consumption and greenhouse gas emissions.

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Complete efficiency planning to reduce future operating costs.

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Produce a module process system solution that meets EHS policy and regulatory compliance.

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## What to expect from your IFS partnership:

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To be assigned to a specialized team (including a project manager, project engineer and design team) with backgrounds specifically aligned to your project needs.

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Quick turnaround of conceptualization tailored to your project.

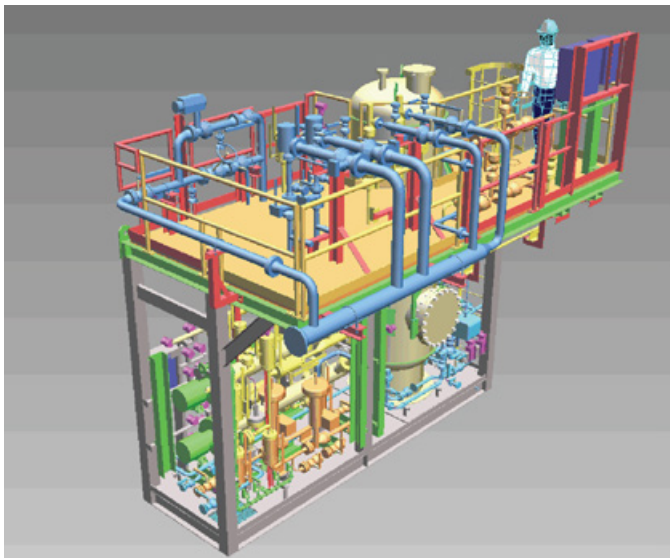
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## 2. DESIGN PHASE

Using cutting-edge AutoCAD technologies, your engineering team will design a 3-D model of your modular process solution package. By spending extra time in the design phase, ensuring all specifications are met to exacting standards, IFS reduces time spent fixing potentially costlier and more time-consuming problems after a build. No matter how complex your project is, IFS team members have the expertise and experience to meet the demands of your project swiftly and adeptly.

Aside from AutoCAD, IFS also utilizes CAESER II pipe stress analysis software, COMPRESS ASME 2015 vessel calculation programming, and RISA 3-D for structural analysis. By integrating these software platforms together, we're able to plan for system stresses and contingencies specific to your plant, and design the module process solution to address your needs head-on.



### IFS Design Phase goals:

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Reduce construction errors through intelligent designs and industry-leading testing software.

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Improve project management capabilities via smart planning that minimizes stopping points and streamlines workflows.

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Minimize equipment interference and maximize safety.

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### What to expect from your IFS partnership:

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A fully functional model presented for your review before construction begins.

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Open communication with key members of your IFS team throughout the process.

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Quick turnaround on input or change requests.

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Built-in automation to support control functions, remote systems, microprocessors monitoring, etc.

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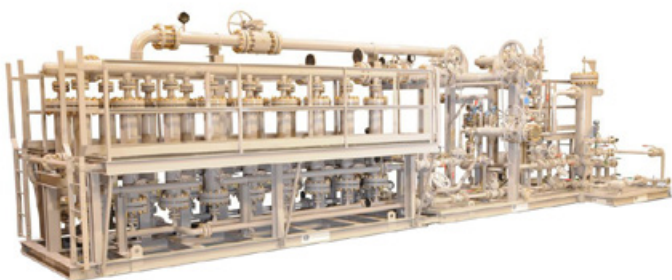
## 3. FABRICATION PHASE

After design phase completion (design is complete/ has authorization and approval), IFS will fabricate your module on-site, in our 125,000-square-foot facility in Tyler, Texas. Over 100 full-time employees keep our facility running at top speed with optimum quality control process, and we boast 18 overhead 26-foot-hook-height cranes that aid in agile construction.

Within the facility, which is housed on seven acres of land, IFS oversees blast facilities (environment controlled), paint facilities (also environment controlled), a radioactive bunker, a heavy assembly bay with two 25-ton cranes, a SAME pipe and vessel fabrication bay, a segregated project warehouse, and a testing and process verification center.

With the power of our technologically- and mechanically-enabled facility, we can handle the scope of any module process solution project with deft agility.

Additionally, for any companies located in countries that require a certain percentage of local content in the overall project scope, we'll work with your local qualified contractors for fabrication and assembly.



### IFS Fabrication Phase goals:

Streamline processes during fabrication to keep manufacturing on-budget and on-deadline.

Adhere to industry-leading safety practices to reduce accidents and errors.

Support superior mechanical engineering standards (certifications include the American Society of Mechanical Engineers, ASME-U&UM, National Board-NB&R, Industrial Controls-CSA, CE ATEX/CE PED, Underwriters Laboratories Inc.-UL, ISO 9001:2008).

### What to expect from your IFS partnership:

ISO 9001:2008-certified quality control measures to ensure your modules perform to the exacting regulatory and compliance standards expected from your plant (IFS was certified by Bureau Veritas in 2010).

Manufacturing overseen by a dedicated IFS scheduler, with project schedule updates regularly logged by management staff (log meeting minutes are recorded as an ISO 9001 control record).

Maxtrax pipe-tracking software used for build quality control and assurance.

SyteLine 9 ERP business system in place.

## 4. QUALITY ASSURANCE PHASE

Quality assurance systems are in place throughout the six-step implementation phase to support IFS in catching any errors before they need to be fixed. During the design and manufacturing phases, we use QA software to test designs for weak spots or problem areas. By the time a module processing system is fully built in our facilities, we've already headed off many potential common problems that occur in traditional "stick build" construction processes.

Once your modular process system has been built, IFS subjects it to more rigorous quality assurance testing, including a FAT (Factory Acceptance Test). All testing occurs at the IFS facility before transportation to ensure a quick implementation process on-site at your plant.



### IFS Quality Assurance Phase goals:

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Spot parts and system failure before transport to provide a seamless start-up experience on-site at your plant

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Work to fix safety issues before they arise.

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Validate that design specs match operational capacity.

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### What to expect from your IFS partnership:

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Transparent communication throughout the testing process.

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Explanations of all testing, test results and time needed to execute QA problem-solving processes on-site.

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An IFS team dedicated to the exacting standards of industry compliance and regulatory specifications.

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## 5. TRANSPORT PHASE

Once your custom-made, engineered-to-order mounted modular system is complete, IFS enters the transport stage – packaging your module carefully for a safe and punctual arrival. IFS has been delivering modular systems since 1979 – it doesn't matter how extreme, remote or challenging the location of your plant is, we're equipped to handle any delivery under any circumstance. Our personnel are trained to deliver on land or offshore – anywhere around the world. We've even delivered to a remote jungle plant location in Ecuador!

With every skid-mounted package build, we include oil and gas project cargo management, which delivers either under Ex Works rule or delivered duty paid rules.

### IFS Transport Phase goals:

Develop laser-pointed transport preparation, so your module processing solution arrives in factory-floor-pristine condition at your plant.

Train/employ reliable transportation personnel who deliver on time, every time.

### What to expect from your IFS partnership:

Your module delivered to your plant when expected.

Frequent communication throughout the transport journey.

Guaranteed operational capabilities.





## 6. START-UP PHASE

By this sixth step, your new module process system has been designed to your specifications, manufactured, tested and transported to your plant. Your IFS team's job isn't over, though. We'll work with you to fully implement your new solution by starting up your new module and training staff to operate the new system.

Because you chose the module build method, "plug in" will take significantly less time than if the module had been constructed on site. That means less disruption for your staff, less distraction from key day-to-day operations and quicker integration processes.



### IFS Start-Up Phase goals:

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Provide industry-leading training and start-up services during module "plug in" and implementation to be sure the module solution is up and running without any complications.

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Ensure all clients are fully familiarized with their new module systems before exiting the plant location.

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Test the new module system to be sure functionality is in place and any potential problems are worked out immediately.

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### What to expect from your IFS partnership:

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An IFS field service team on site to help "plug" your new module into place.

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After delivery, parts, service and warranty supports to keep your module running well into the future (with contract; see next page).

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# BEYOND IMPLEMENTATION

After all implementation services are complete, IFS's Product Support Department offers a Field Maintenance Services Contract. The contract works in place of an extended warranty and provides you with continued support from experienced IFS technicians familiar with our systems and your operations. IFS Field Technicians are supported by our Engineering Department, 24-hour Product Support Department, Parts Department and the expedited services of our trusted vendors.



With the Field Maintenance Services Contract, IFS becomes your partner in operational success. Here are just some of the services available through the contract:

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Vibration Analysis and Condition Monitoring – All IFS service technicians are ISO 9001 Level 2 Certified Vibration Analysts proficient in the latest technologies.

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Ludeca Rotalign Laser Alignment – ISF uses laser alignment tools to hot-align existing equipment for optimal operation. All alignment data can be recorded and printed for future reference.

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Thermal Imaging – Scanning electrical panels and connections with a thermal camera to find hot spots that could indicate a bad component or connection.

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Equipment Evaluation – Inspection of major equipment, including pumps, blowers, heaters and associated instrumentation. Performance data will be compared to original specifications, ensuring components are functioning as designed.

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Start-Up/Shutdown Procedures— – Assisting your plant personnel in developing start-up/shutdown procedures for normal and emergency situations.

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PSVs and Ammonia Leak Detectors Calibration – Developing schedules for calibration and maintenance.

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# MORE BENEFITS

Using a modular construction process saves 25 percent to 50 percent more time than a traditional “stick-built” construction method. With minimum site disruption, environmental impact and safety risks, partnering with IFS saves your plant money, time and convenience.



Here are some other advantages of modular process systems to consider:

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Modular-built solutions have higher quality control measures in place, reducing variability in building and decreasing problems after build.

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Pricing is firm with modular building, reducing overrun risks.

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Because our modular systems are built on-site and indoors, weather delays don't exist. Your modules are built on time, every time.

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Instead of relying on whatever workers are available in your area, your module is built by industry-leading IFS professionals.

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Throughout the process, you only have one vendor to manage: **IFS**.

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Your plant site doesn't turn into a construction site, saving you disruption and distraction.

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IFS is a dependable company with a long track record, so you can count on us for thorough documentation and reliable after-sales services.

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Reach out to us today, and we'll walk you through an individualized plan for your specific needs.

**Systems upgrades just got simpler. Contact Us.**