

Cutting Edge...

Allegro's R&D Insider Newsletter



R&D Debrief

By: Aditya Srivastava

Welcome to the first edition of Cutting Edge, Allegro's R&D newsletter written specifically for Allegro employees. Here, each quarter, we'll share with you news about our latest developments to advance the Allegro mission: "To help the top companies worldwide improve their results by maximizing the value of their commodities, from the point of production to the point of consumption."

In this issue we will share:

- » R&D priorities for the next 12 months,
- » Updates on the General Release plans,
- » News about innovative projects currently underway at Allegro, and
- » Key customer projects involving Calpine, Exxon, and Chinese National Offshore Oil Corporation (CNOOC).

Our goal is to keep you informed on what makes Allegro a "cutting edge" company, so that you can express this position convincingly to customers, prospects, partners and other industry influencers. I am excited about our continuous improvement and the progress we have made towards building a world-class product development organization at Allegro. If you have any questions regarding our combined activities, please feel free to email me at a.srivastava@allegrodevelopment.com. Onward and upward!



World-Class Product Development, Here and Now

In line with our Go-to-Market Strategy (GTM) for 2014, the R&D team has forged ahead, continuing to evolve Allegro as a mature, customer-focused software provider. Chief to this mission is building a world-class product development organization to support our overall enterprise goals.

Since the last quarter of 2013, the R&D team has made strides improving our software development processes. We have sharpened our focus on quality and performance, published a schedule for General, Maintenance and Patch releases, and defined a process for roadmap driven releases.

We have aligned product management with development under a single umbrella, bringing customer insight to our development work. This not only contributes direct input from our customer base to the R&D team, it also provides visibility on product priorities and future direction back to our customers.

The desire for solutions that meet entire market needs rather than individual components has been heard loud and clear. This dialog has led to the following 2014 R&D priorities moving forward:

- » Enhance Our Core Product
- » Improve Our Quality
- » Strengthen Our Performance
- » Continue to Innovate

As of this writing, the R&D department is making significant progress in all four areas. We will endeavor to keep you informed as the year progresses. Feel free to check in on our progress at any time – and thank you for your input!

R&D Priorities



General Release Plan



Current updates planned for our General Release software are now underway and scheduled to go public by October. Planned in the last quarter of 2013 and begun in Q1 of the current year, our R&D team has been focusing on the following improvements:

Functional Enhancements

We are enhancing the product in many areas. Vertical areas, such as NG, LNG and Power Components, are being enhanced largely based upon customer input and market requirements. Horizontal components, such as Position, Settlement, Net Valuation and Workflow, are also being enhanced for the general release. Integration components, such as Exchange Connect, FERC Connect and Price Connect, have also been substantially enhanced, as well as the Derivative Regulation component to meet new EMIR/REMIT compliance requirements. In all, these enhancements have resulted from the feedback we received working jointly with several key customers.

Quality Improvements

Our commitment to “zero defect” quality management manifests in five best practices layered across our development process. These are:

1. Use of Microsoft Test Manager to document all test cases.
2. Prepare test data for individual and integrated solution testing.
3. Ensure a test case is created for each defect listed in our 9131 patch report.
4. Analyze test cases against functional requirements for increased test coverage.
5. Publish test pass/fail reports in the test manager throughout our release process.

To execute these best practices, a new quality assurance team structure has been created, involving representa-

General Release Plan



tives from our product management and development staffs working jointly with our QA team, to perform end-to-end integrated testing for trade-to-cash, as well as in-depth testing of individual components.

Performance Improvements

Our new performance testing process will play a major role in the release process. Every area we mark for improvement will endure the same cycle of scrutiny prior to release. Our approach includes:

- » Creating and managing test data for performance analysis.
- » Analyzing code structure, queries and CPU/IO usage to identify improvement opportunities.
- » Profiling and tuning the database.
- » Prioritizing progress around sprint cycles.
- » Recording the final improvements.

In regards to database tuning, we have adopted a line of best practices for internal and external maintenance purposes. These are:

» **Internal best practices:**

- » Adopt industry standards for profiling and analyzing queries and IO.
- » Optimize code with appropriate index usage
- » Profile new queries regularly
- » Eliminate repetitive query execution

» **Client database maintenance best practices:**

- » Monthly index maintenance
- » Monitor index fragmentation
- » Periodically review database statistics
- » Monitor database server IO for abnormal spikes.

There is much to do before we launch our General Release this Fall, but our plan is solid and our progress has been steady. Please watch your mailbox for further updates as we cross into the testing phase this Summer.



Innovation: Taking Allegro to the Next Level

One of the marks of a world-class development organization is the ability to develop new products in parallel at a consistently high level of quality. Much of what we have accomplished to date has set a foundation for that, and we are continuing to build our R&D capacity to handle new work on the horizon.

Moving into 2015, expect to see innovation breakthroughs in the following areas:

Optimization

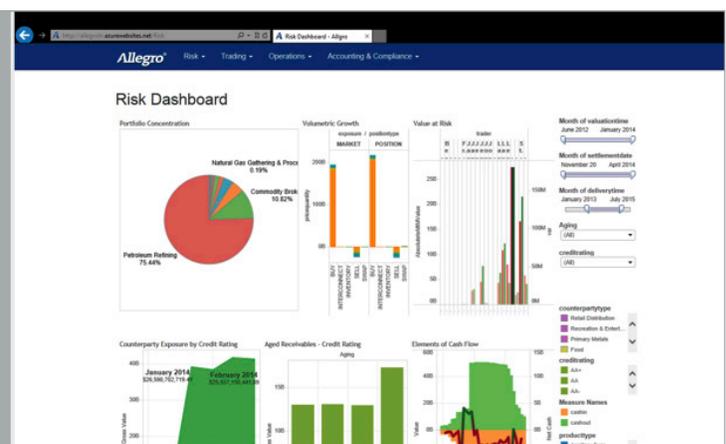
As we strive to improve our commodity value chain offering, optimization of our scheduling and nomination, physical logistics, and asset and portfolio capabilities will serve to expand our competitive separation. Improvements in these key areas will help our customers manage variable operating cost, track commodities from source to point of consumption, and reduce risk and costs associated with hedge strategies.

Business Intelligence

In response to our customers' need for added visibility into business metrics, we are developing rich dashboards that include a variety of built-in and customizable KPIs. Most significantly, our trading and risk KPIs will be expanded to include metrics organized around subject areas including operations and accounting.

Our BI offering will utilize industry-standard infrastructure options, such as SQL Server Analysis Services (SSAS) for Microsoft, and Tableau for fast and easy deployment in the cloud or on premise. Both offerings will come fully packaged with data models and KPIs for out-of-the-box deployment, yet be easily extensible and customizable to suit unique customer needs.

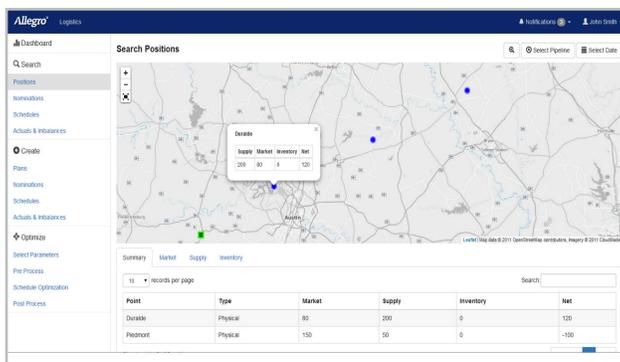
Dashboards will allow users to access key business metrics in real-time from any desktop or mobile web browser for quick business insights at both enterprise and granular levels.





User Experience

In response to customer input, Allegro's R&D team is working to improve the graphical quality of our software, incorporating more maps and charts, as well as guided navigation cues to help users quickly interact with their data. Web-based and mobile solutions are also on the drawing board, with work lists tied to key user roles and tasks.

Point	Type	Market	Supply	Inventory	Net
Disaste	Physical	80	200	0	100
Pedroust	Physical	150	50	0	-100

Scalability

Arriving at a more scalable solution is critical in speeding our customers' time to market and positioning Allegro as the preferred provider. To this end, we are in the process of refining our basic architecture to incorporate synchronized in-memory application components, to complement our current core components and achieve improved, real-time performance in our application.

Key Customer Projects



In this issue we will highlight three key customer projects (one from each major geographical area) that have deeply impacted our product and helped strengthen our position in the marketplace.

Calpine

Calpine, a major U.S. power company that delivers over 27,000 megawatts of electricity to customers and communities in 20 states in the U.S. and Canada, is replacing its existing ETRM system with Allegro. We closely worked with Calpine, starting in the early part of 2013, and continued to work with them through Q1 2014. The collaboration with Calpine helped us on many fronts, including performance improvements, handling of additional financial instruments, transportation contracts, net valuation calculations, Emissions & Renewables and Natural Gas enhancements. This is a savvy customer who is leading the ETRM needs for their industry, and we are glad to have the opportunity to partner with them.



ExxonMobil

ExxonMobil, a household name that needs no introduction, worked with us on the GCRE project that resulted in several enhancements to our Natural Gas solution to manage the scheduling operations for the European market. We added several improvements to the entry/exit pipelines such as the ability to capture entry/exit capacity, pipeline balancing, balancing using storage inventory, and fuel calculations. We also added the capability to connect sub-terminal and terminal points for terminal capacity utilization, linkage of trades across many pipelines and different companies, and overall improvement of performance for nom retrievals.



Chinese National Offshore Oil Corporation (CNOOC)

Chinese National Offshore Oil Corporation (CNOOC), China's largest producer of offshore crude oil and natural gas and one of the largest independent oil, gas exploration and production companies in the world is using our product. The R&D team closely collaborated with CNOOC in enhancing the product to meet the requirements of the LNG industry for the APAC market. In addition to managing increased pricing complexity for LNG, we also extended the software to capture additional LNG attributes at the trade level and manage the entire LNG process on an energy, volume and mass level, a key requirement for the LNG industry.

