



COLLABORATE17

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

Case Study: ASCP and Production Scheduling (PS) Implementation for Process Manufacturing

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@NexinfoSolution

Meet us @ Booth # 1038



Session ID: 10297

(IOUG) OAUG Quest

#C17LV

Agenda



- Nexinfo introduction
 - ✓ Who is Nexinfo
 - ✓ Services: What we do?
 - ✓ Industry Experience
- Oracle Production Scheduling overview
 - ✓ Why PS?
 - ✓ PS integration with EBS and ASCP
 - ✓ Production Scheduling Detailed Process
- Case study: Biologics Production Scheduling implementation
 - ✓ Legacy scheduling process (manual)
 - ✓ Why implement automated scheduling in Biologics?
 - ✓ Expectations from scheduling tool
 - ✓ Solution provided
 - ✓ Challenges faced
 - ✓ Formula, Recipe and Routing in OPM to support planning and scheduling processes
 - ✓ Achievements
 - ✓ PS sample screenshots

Who Is NexInfo?



SUMMARY

- Leading provider of Supply Chain Consulting, Security & Compliance Consulting, Product Lifecycle Management solutions, and IT Solution Development & Implementation Services
- Founded in 1999
- Managed by computer industry & supply chain professionals
- Certified ERP Partners
- Clients include emerging companies and Fortune 1000 corporations
- Featured in Gartner reports as a specialized consulting company, 50 Smartest Companies of the Year 2016 by The Silicon Review & 100 Most Promising Oracle Solution Providers 2015 by CIO Review



PARTNERS:



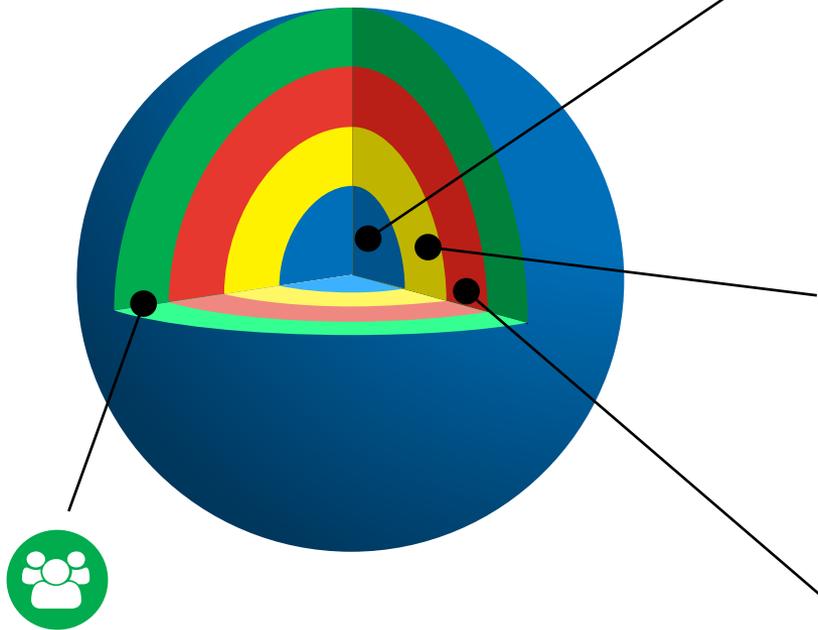
CLIENTS:



CORPORATE INFO

- HQ in Orange County, CA with satellite offices in Orange, CA, Redmond, WA, Chicago, IL, Bridgewater, NJ and Dublin, Ireland
- Operations across the United States and Europe
- Development & Managed Services center in India

Services: What Do We Do?



PROCESS DESIGN

Business environment changes make process improvements imperative for organizations. NexInfo experts objectively assess organizational processes and identify opportunities for improvement. We take a one-on-one approach to each client project, inviting team leaders from all impacted areas to get involved, reducing time and resource waste, and creating a collaborative environment.



SOFTWARE IMPLEMENTATIONS

Whether your organization is looking to expand into new markets or respond to beat out global competitors, there are software-related challenges to be faced. including new financial reporting and tax standards, increased compliance and security standards, and foreign customers with unique demands and markets.



MANAGED SERVICES

For companies that prefer to manage their own projects or for smaller projects that require specialized skills, NexInfo provides top-notch augmentation to ensure your success. As a critical component of continued and lean business processes, managed services empowers your operations and business growth when tight budgets, limited resources, and complex technology come into play.

STAFF AUGMENTATION

The NexInfo Team is comprised of specialized industry consultants with a passion for improving and implementing challenging business system solutions.



Industry Experience

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- High Tech Manufacturing & Distribution
- Life Sciences: Medical Devices & Pharma
- Biotechnology & Clinical Research
- Industrial & Equipment Manufacturing
- Discrete & Process Manufacturing
- Food & Beverages
- Engineering & Construction
- Power, Oil & Gas
- Aerospace & Defense
- Consumer Goods, Retail & Franchise
- Compliance & Security Governance





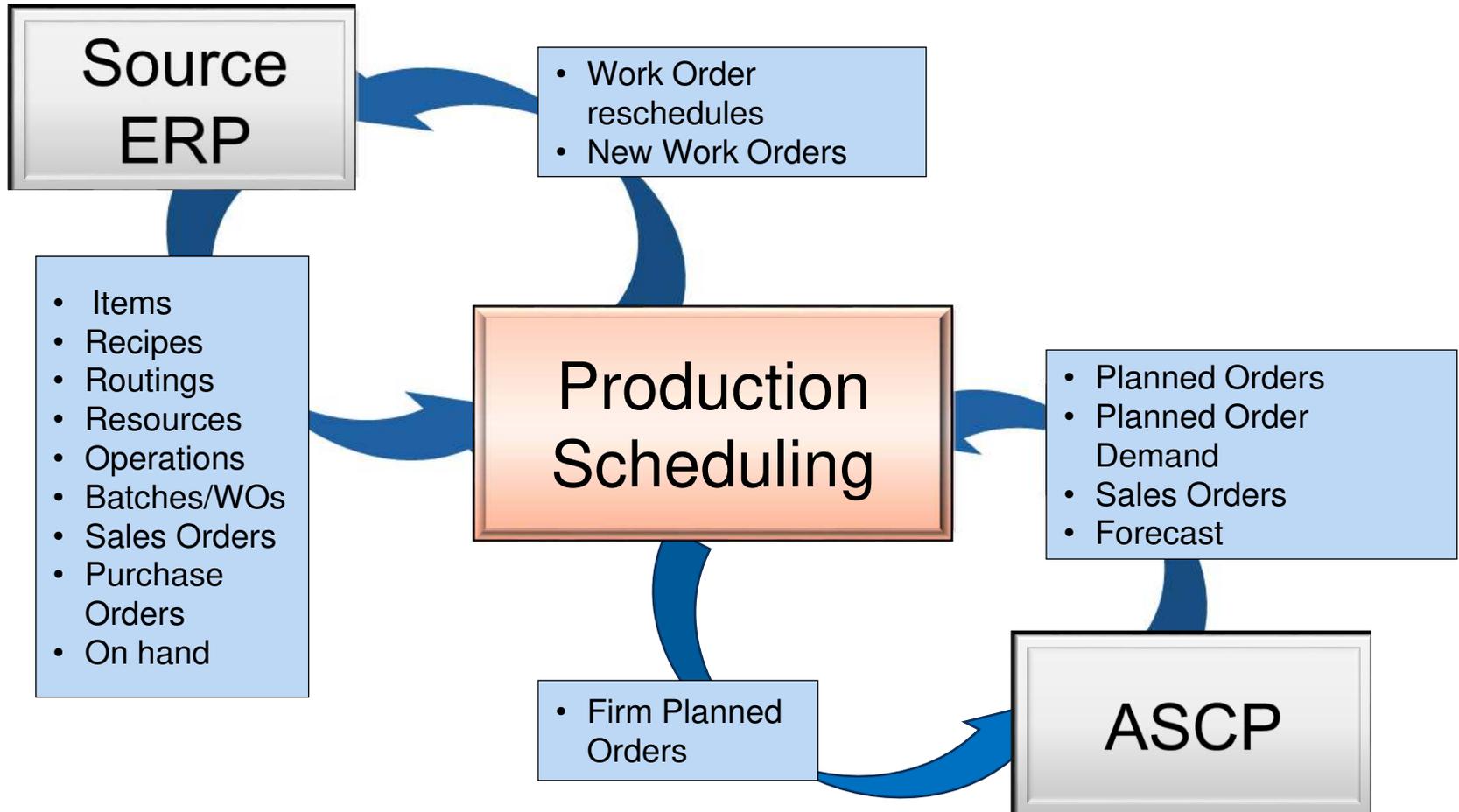
Oracle Production Scheduling Overview

Why PS ?

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- Automation: Automate scheduling and production plan generation process , no more excel sheet manual planning.
- Quick turn around to Supply Chain disruptions, before next ASCP plan run.
- Single source of truth and organizational visibility
- Include additional constraints in scheduling process (e.g. material component supply, capacity, allocations etc.)
- To have faster simulation capabilities for analyzing business scenarios (i.e. add maintenance, understand shop floor backlog, understand true capacity)
- To optimize semi-finished inventory & medium term supply variability
- To manage by exceptions but with option of manual overwrite

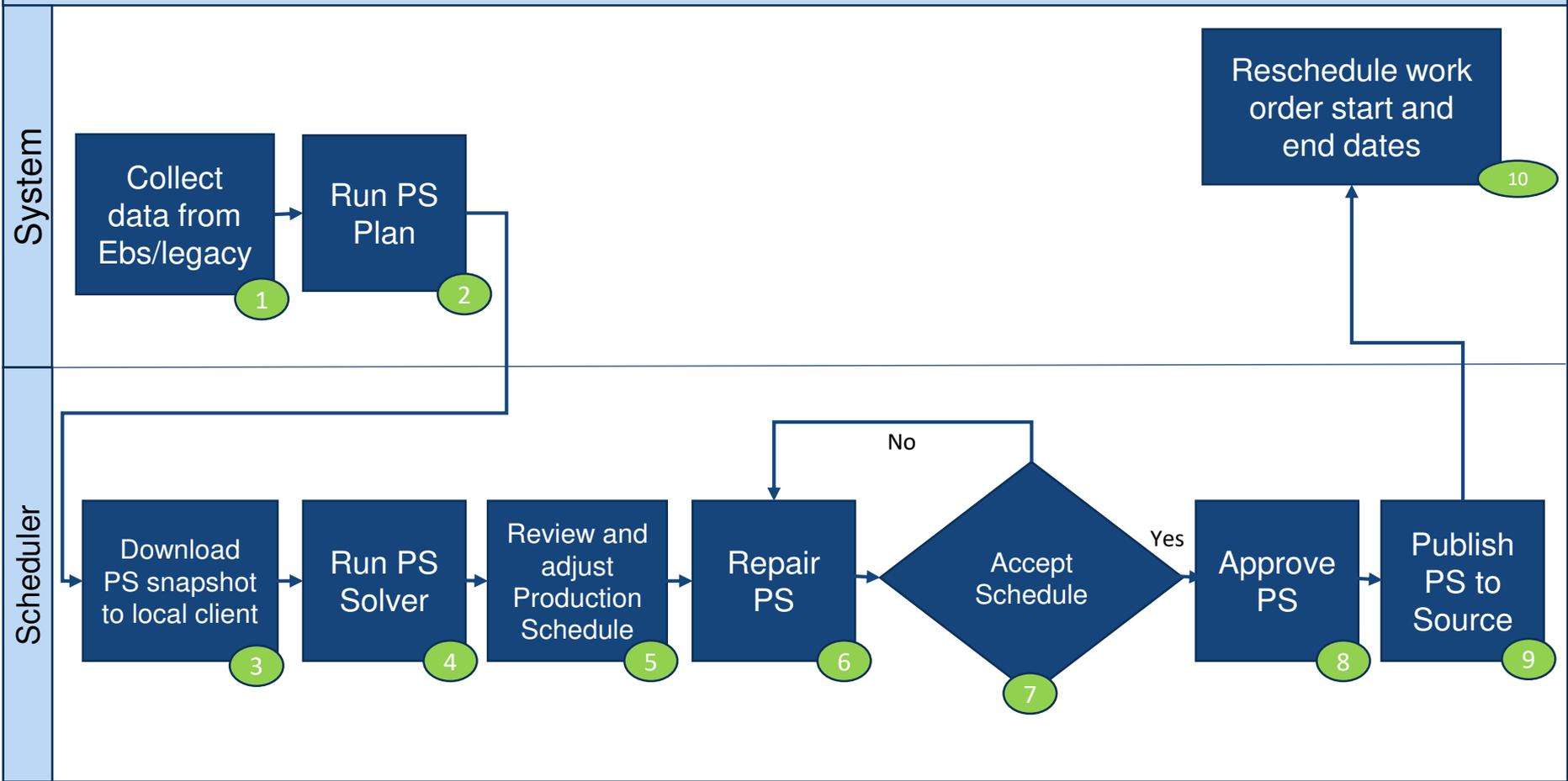
PS integration with EBS & ASCP



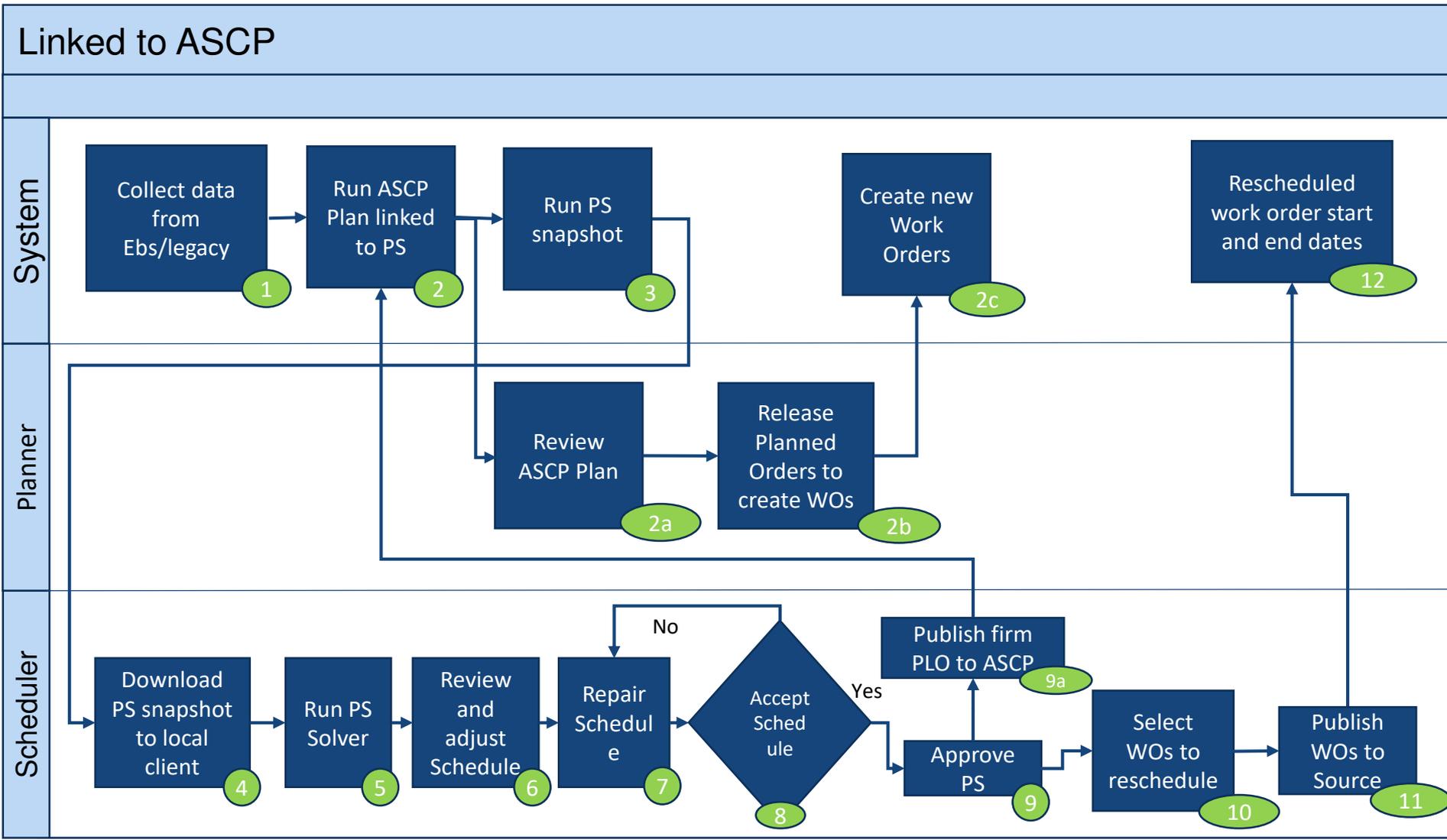
Production Scheduling Detailed Process



Standalone – No link to ASCP

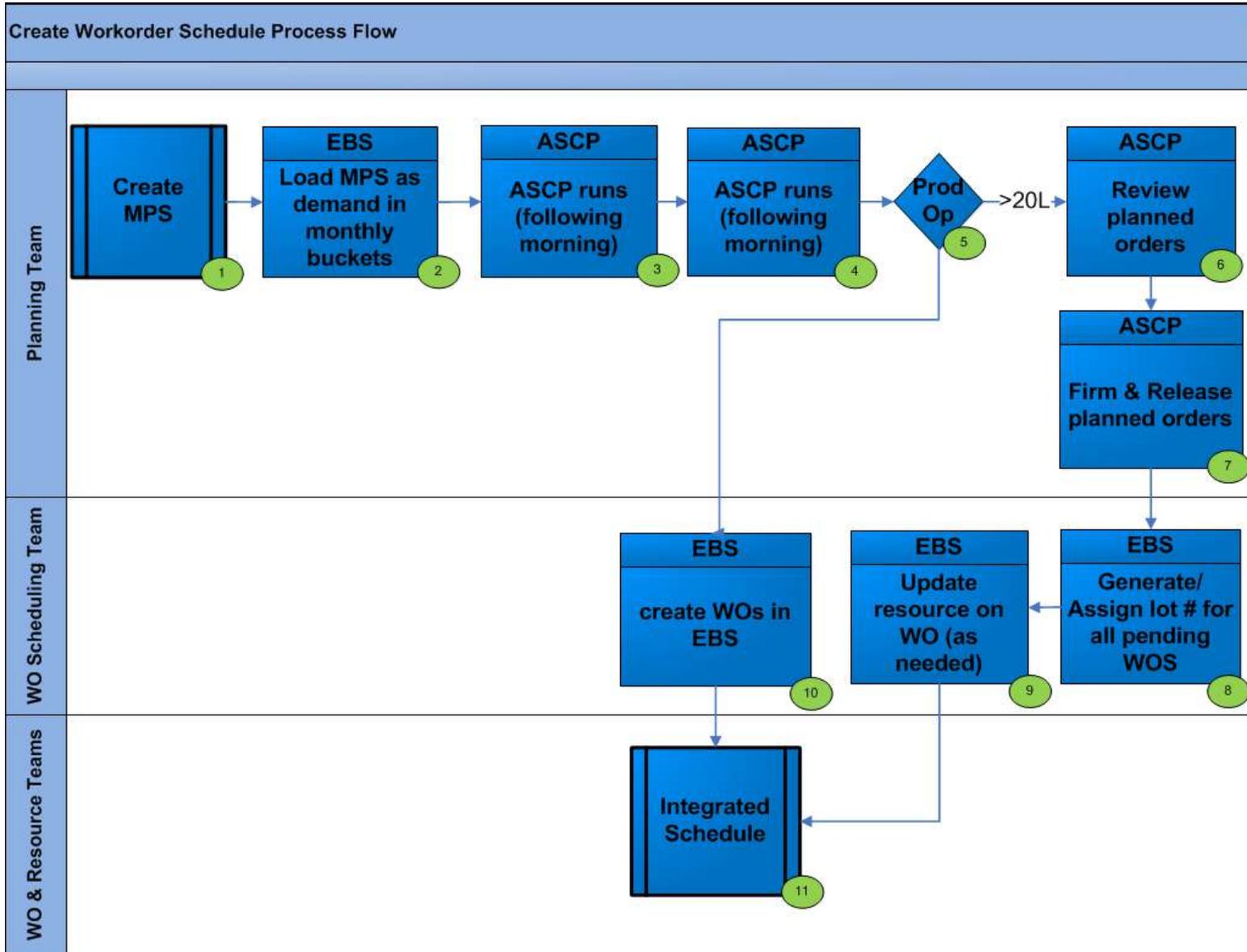


Production Scheduling Detailed Process Cont.



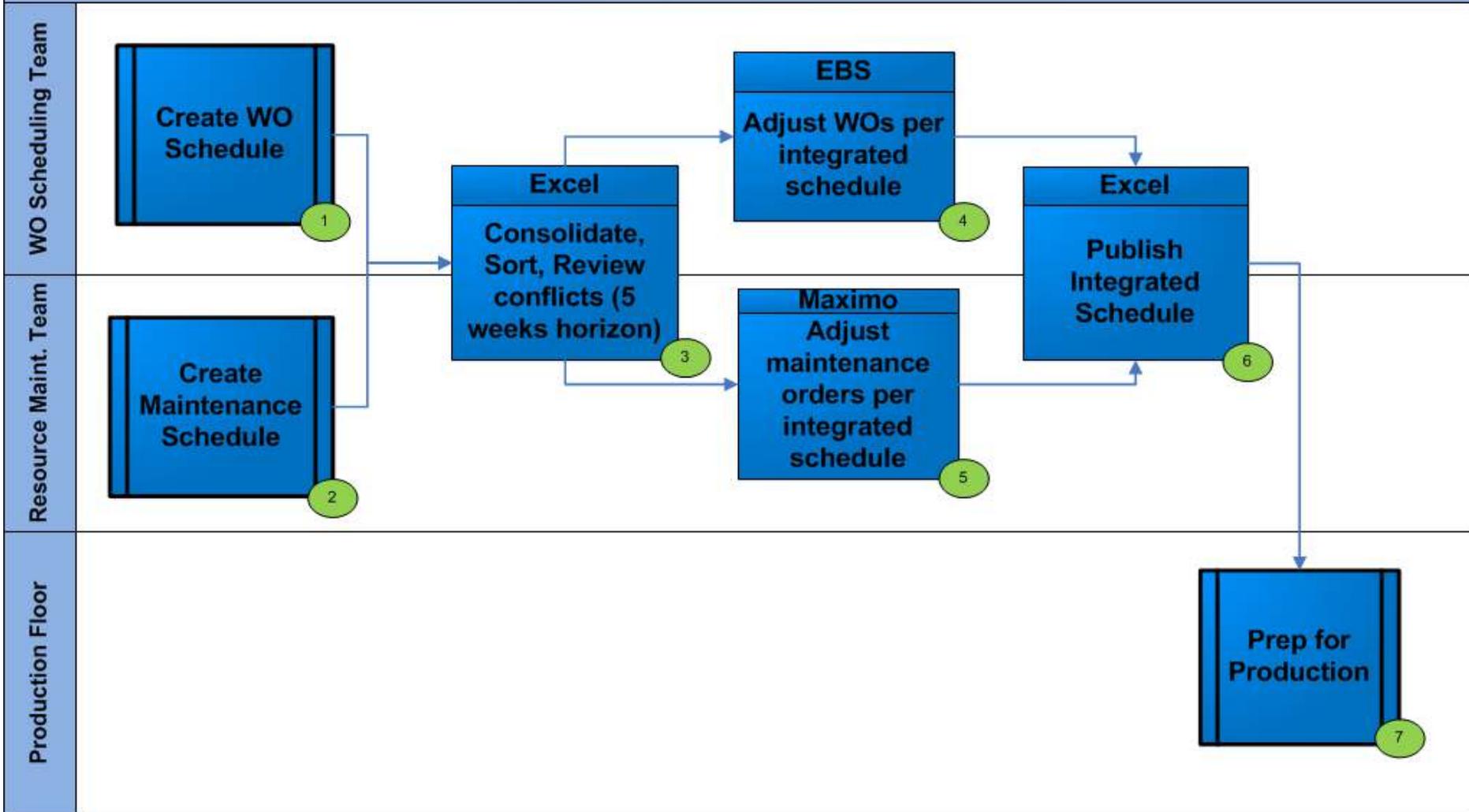


Legacy Scheduling Process (Manual)



Legacy Scheduling Process (Manual)

Create Integrated Schedule Process Flow



Why Implement Automated Scheduling In Biologics?



1. Current scheduling process is manual and require huge effort from Planning, scheduling and resource maintenance groups.
2. Scheduling is done independently for production and maintenance, then merged manually in excel sheets.
3. No visibility to production plan in the system.
4. No integration between EBS and Asset management system (Maximo)
5. Planning & scheduling is less than optimal for current state and will not support increased run rate/cadence without extensive manual efforts applied by personnel across various groups
6. Current state increases risks for production delays, heightens the compliance risks, and will impact ability to consistently supply commercial product.
7. Manufacturing process is complex
 1. Batch Records: ~75-90 per mfg. run
 2. Duration: ~8-9 weeks from thaw to BDS
 3. Resources: >50 used per run
 4. High frequency of equipment calibration & maintenance activities on mfg. resources.



Expectations From Scheduling Tool



1. Scheduling operations, resources, and capacity to a finite level (to the hour) per defined sequence of operations
2. Automated integration of production scheduling tool and Maximo
3. Plan and Schedule both capacity and materials with constraints (not infinite capacity/materials)
4. Graphical displays (Gantt chart view) – Easy to see constraints/bottlenecks
5. Capability of integrating QC and QA operation steps into production schedule/work orders
6. Relationships Scheduling: Reschedule one = reschedule all (per manufacturing run)
7. Simulations – Running what if scenarios integrating capacity and materials



Solution Provided

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- Implemented Oracle Production Scheduling
- Built integration between Maximo and Oracle ASCP for PS to have information of resource downtimes so that it can generate feasible schedule for manufacturing floor

Challenges Faced



- **Resources downtime from external (Maximo) system to PS**
 - Developed WebADI form for user to upload downtime data from Maximo and then run ASCP and PS
- **Changeover in Biologics Industry**
 - In biologics industry it is needed to clean (CIP or SIP or both) the equipment before it is used next even for same item and same operation from different WO.
 - Changeover cannot be setup here as it is same item and same operation.
 - CIP and SIP steps are added as operations into routings so that PS can schedule these cleaning activities before resource is used for next WO.
- **Resource sharing across WO**
 - PS schedules resources such a way that similar operations from all WOs are completed first and then schedule different operation that resource can perform. So, to make sure cleaning activity is performed after resource is utilized we added step dependency with proper min and max delays.

Formula, Recipe and Routing in OPM to Support Planning & Scheduling Processes



- Routing step dependencies
 - Step dependencies have to be defined between all routing steps.
- Step material association
 - All the ingredients in formula are assigned to routing steps.
- Formula ingredient attributes
 - When ingredient is repeated multiple times within the formula, following attributes have to be setup in the same way: Contribute to yield, Contribute to step and Scale Type
- Step dependency standard delay
 - Have to use positive numbers for standard delay. Oracle EBS allows to use negative standard delay, but PS doesn't honor negative numbers.
- Item pegging information
 - Assign all the ingredients in the formula to operations that are in main line and yielding to final product step. This will make sure pegging information is available for all the ingredients in the formula.

Formula, Recipe and Routing in OPM to Support Planning & Scheduling Processes Cont.



Activity	Operation
Activity names or descriptions will not be displayed on PS workbench for both planned orders or work-orders.	Operation description will be displayed on PS workbench for pending orders, WIP orders and planned orders
Cannot define delay times between activities. Hence activities cannot be run in parallel it is always start at end of earlier activity.	Step dependencies (Finish to start or start to start) with standard delay and max delays can be specified between operations.
Activities will always be scheduled alphabetically. This can be avoided by setting up offsets.	Operations will be scheduled based on the way step dependencies are specified.

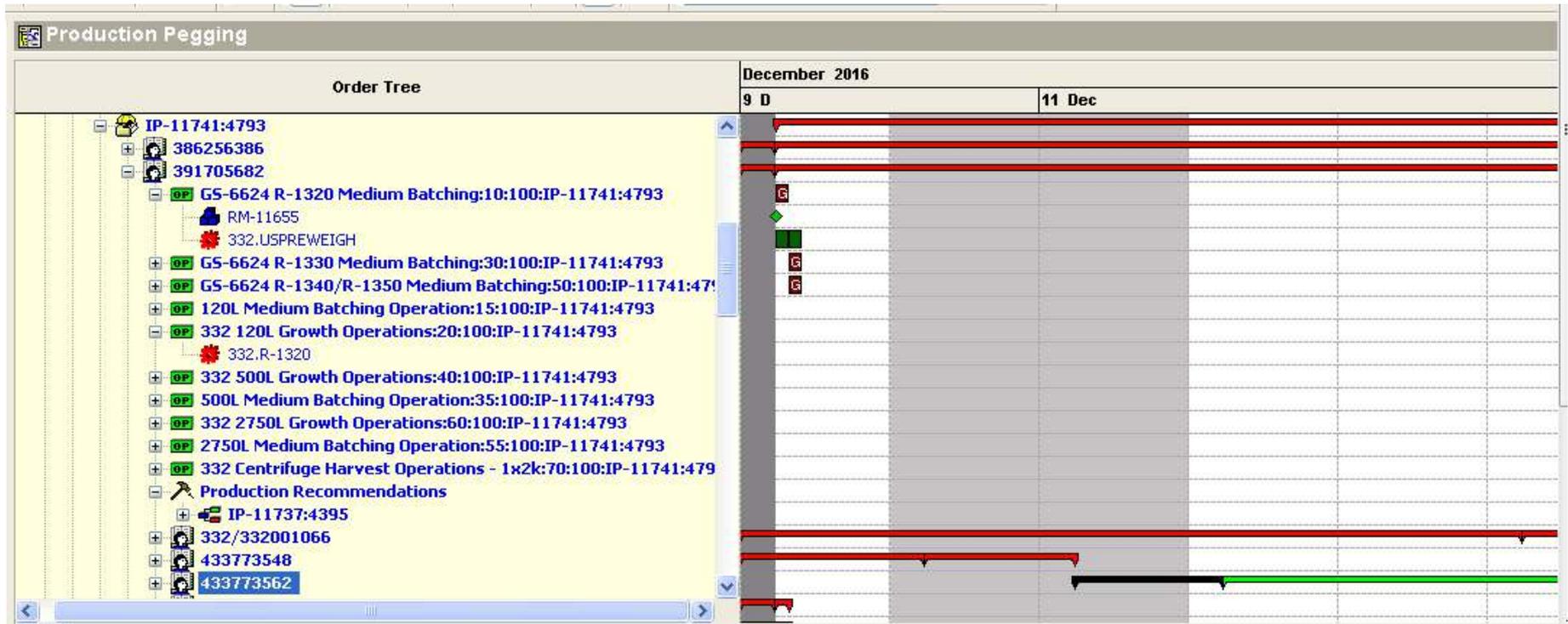


Achievements

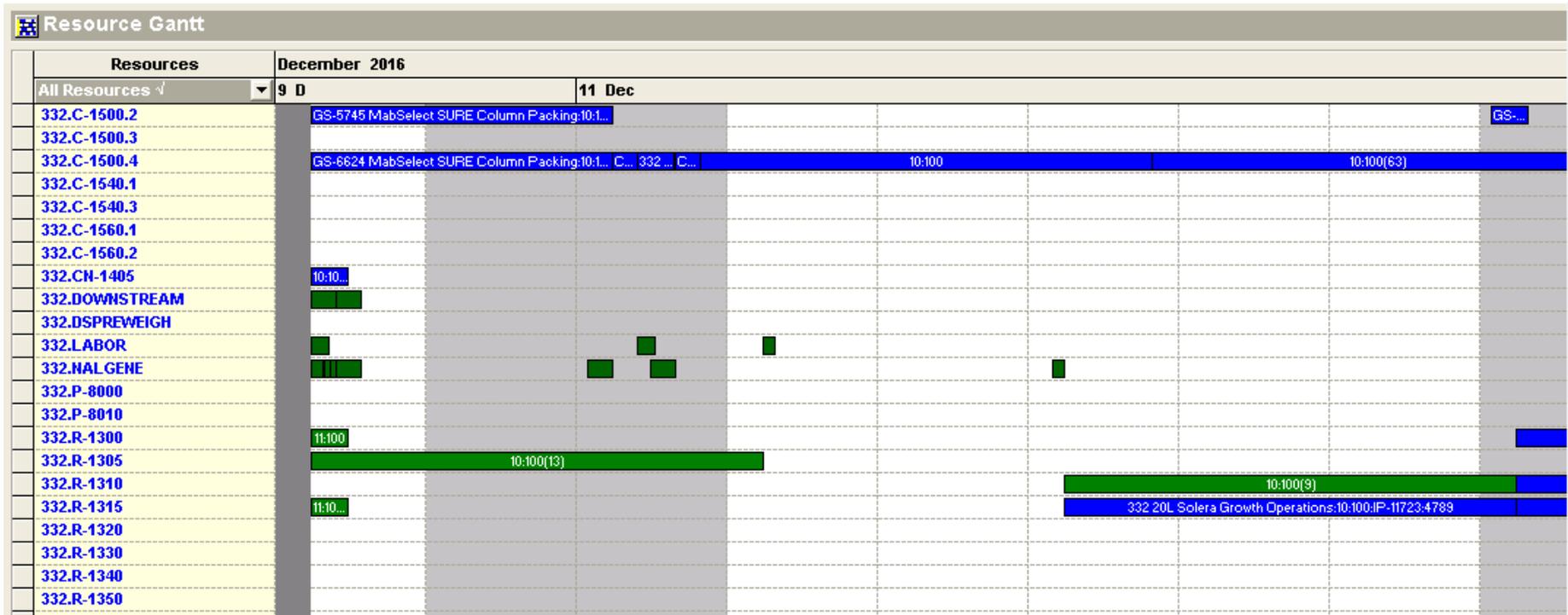


1. Achieved automated scheduling process which requires minimal effort from Planning, scheduling and resource maintenance groups.
2. Full visibility to production plan in the system.
3. Semi automated integration between EBS and Asset management system (Maximo) is established
4. planning & scheduling is now more optimal and will support increased run rate / cadence without extensive manual efforts applied by personnel across various groups
5. This new system reduces opportunities for production delays, compliance risks, and provides ability to consistently supply commercial product.
6. Adhoc maintenance requests can be handled and what is scenarios can be performed.

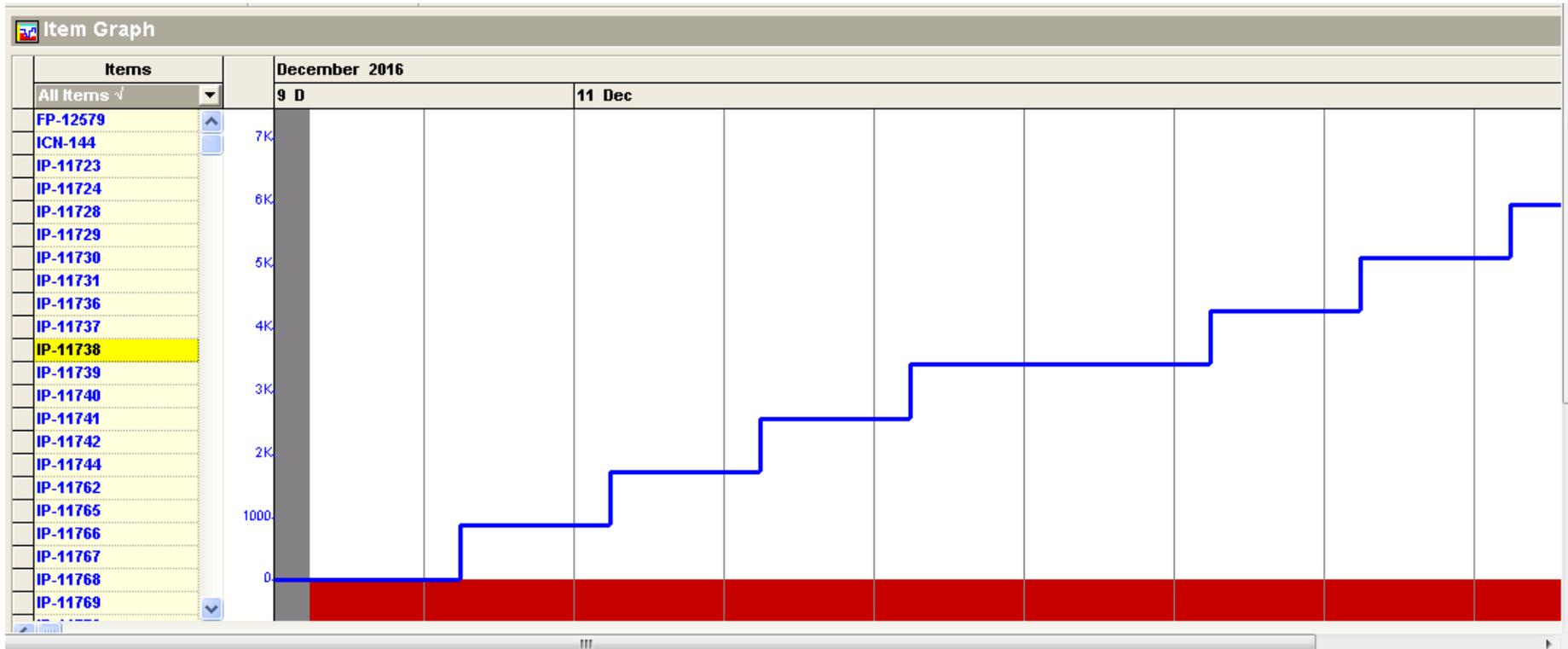
PS Sample Screenshots



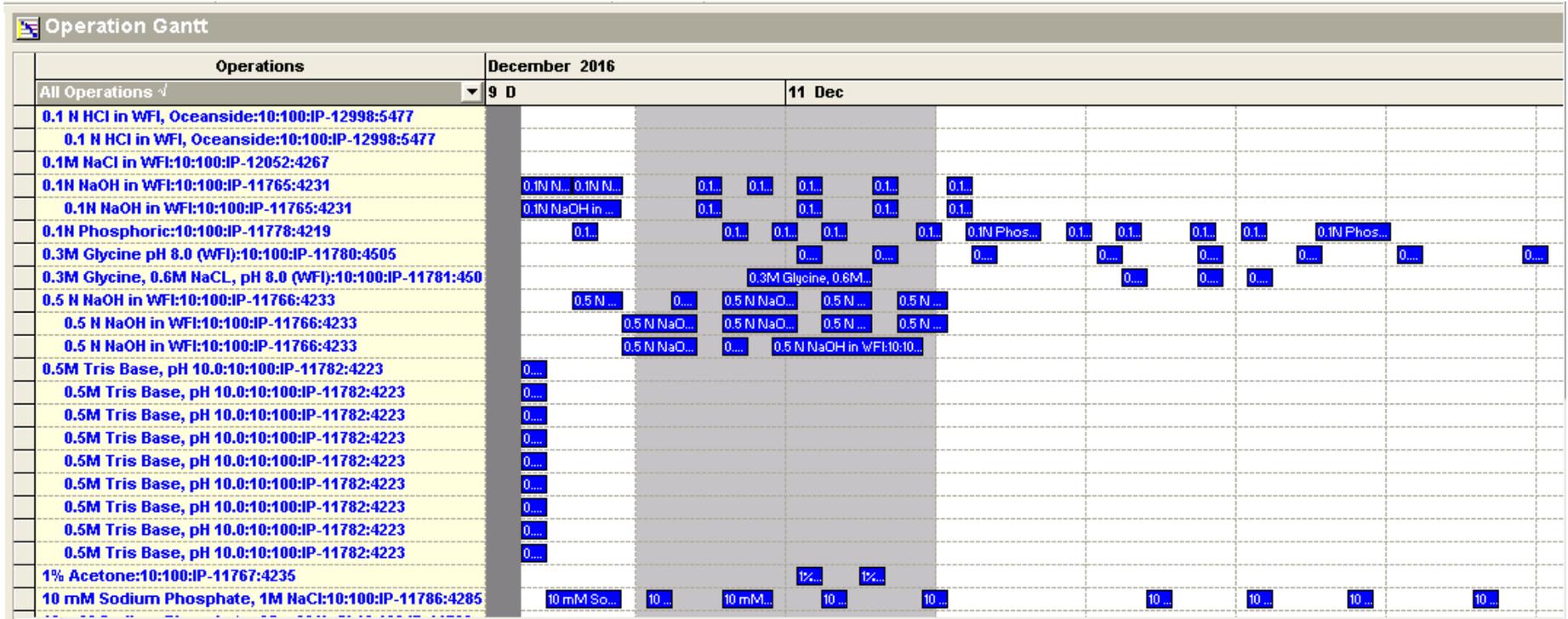
PS Sample Screenshots Cont.



PS Sample Screenshots Cont.



PS Sample Screenshots Cont.



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Q&A



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