

A 100% FOCUS ON SHIPYARD EFFICIENCY

WITH SHOP FLOOR CONTROL AND
INTEGRATED PLANNING
FOR NEW BUILD AND REPAIR



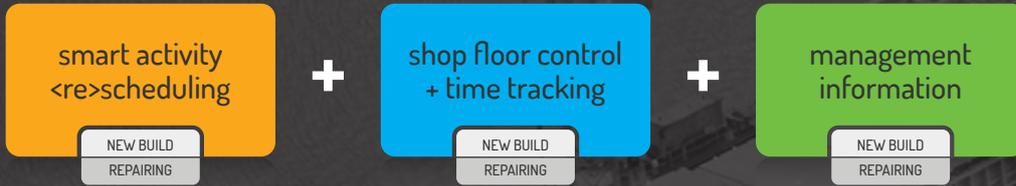
**A manufacturing Execution System
(MES/MOM) for the shipbuilding industry**

**Live connections to Primavera P6,
MS-projects and your ERP-system**

**More than 300 vessels were already
built with Floor2Plan**



Triggering Smart Shipbuilding



“

Floororganise aims to be an inspiration for its clients in creating ever better and more efficient manners to direct and control the daily efforts on the yard floor and in the shipbuilding process. We do so by maintaining an open dialogue with the workers on the yard floor, the planners, the engineers, production management and foremen by providing them with tailored solutions that fit the nature of their building activities and yard-specific requirements.

- Gert-Jan Biersteker, founder Floororganise

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WORLDWIDE PARTNERSHIP WITH:



YARD EFFICIENCY



At Floororganise we increase the efficiency of shipyards by providing each project member and function with detailed, relevant and role specific information. Based on existing IT and information systems. With these range of tools, a bridge function between the office and the shop floor is set up. Allowing for more direct and detailed insights in performance and a look ahead in time.



An overview of all modules (active modules vary per user / role)

- Live connections to existing ERP-systems
- Live connections to planning-databases
- Live connections to entrance gates (for time tracking of shop time)



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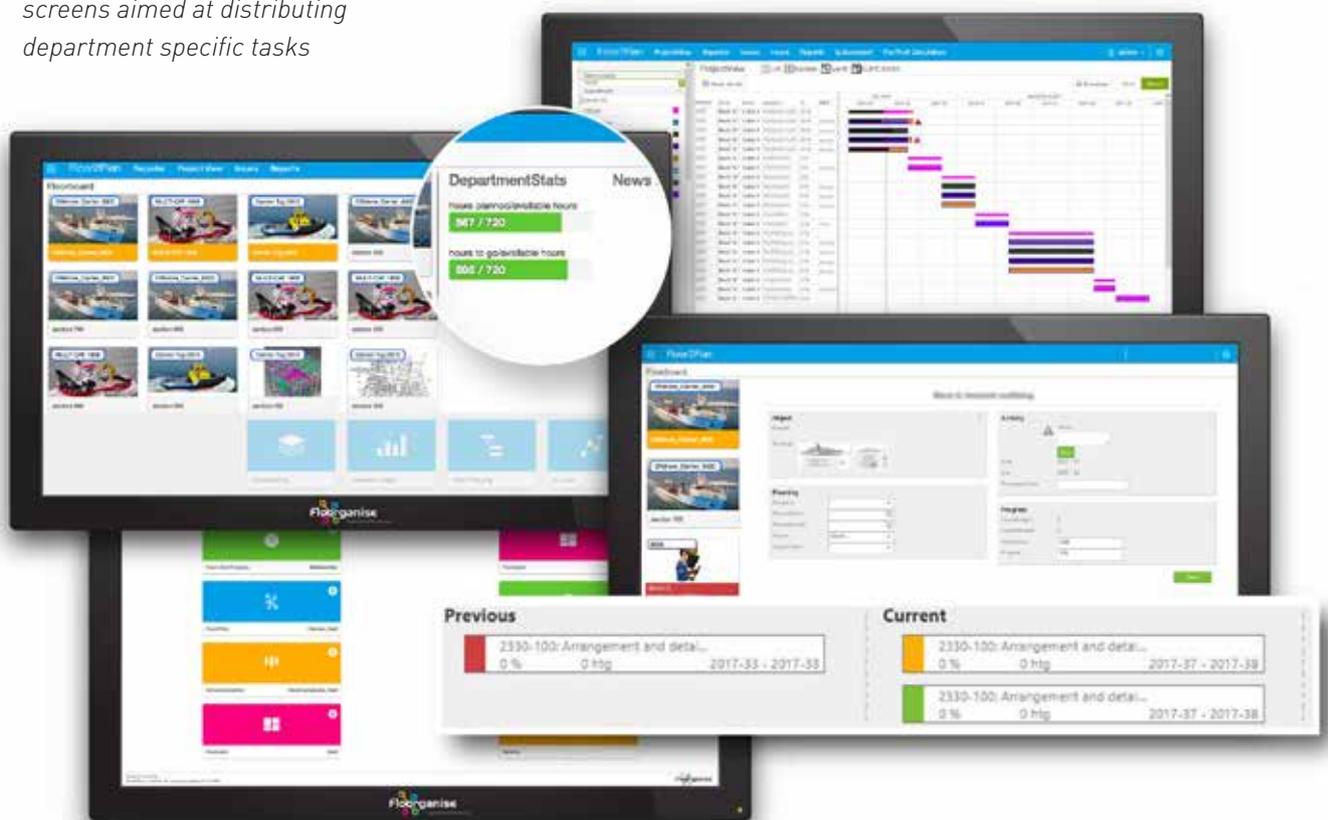
Every shipbuilding project is unique but building ships follows a repeating process. Floor2Plan supports that process with a dedicated set-up that matches the logic of our yard, infrastructure and division of roles and functions

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USER-SCENARIOS

In the following pages we provide an overview of the scenarios that are applicable for each of a range of functions. Based on common practices at several yards we know about the division of work and the responsibilities and priorities of each role.

Figure 1: An overview of the various screens aimed at distributing department specific tasks



We highlighted several aspects in this summary but there is more to be told on specific topics. Such as space/floor planning, S-curves, engineering scheduling and more. Our tooling is suitable for usage on a PC, touchscreen, tablet and smartphone.



OVERVIEW USER-SCENARIOS

1. PROJECT AND DETAIL PLANNING

2. FOREMEN

3. PROJECT MANAGER/ AREA MANAGER / PROJECT CONTROL

4. SUBCONTRACTORS

5. ENGINEERING

1. PLANNING TOOLS FOR SHIPBUILDERS

HOW TO ADD MORE DETAIL USING AN INTEGRATED AND INTERCONNECTED PLANNING

Following the build strategy of the individual vessel and specifics of the yard, the project plan and the various detailed plans are ideally shaking hands within the break down of activities and milestones of the project.

Yards that make intelligent handshakes between the project and detail plan experience the benefits of a truly integrated planning that runs from the top all the way down to distributing tasks to the distinctive production departments, subcontractors and suppliers. Allowing progress and updates to be transferred through the same chain of planning levels and through IT-systems, such as ERP and P6/MSP.



1. Setting up and sharing your Project Planning using conventional planning tools

Are you using MS Projects, Primavera P6, Excel or any other tool to set up your project plan and its major milestones? We read your project plan from its database and transfer it through to all involved in the project:

- Read out your project plan and its details
- Distribute your plan online to all project members
- Visualize tasks per room, system, area, block, section, configured per department
- Connected all over the world on all kind of devices
- Log in using your corporate Microsoft 365 credentials
- Limit the information shared to a need to know basis



Share live planning data throughout the world instantly on all devices.

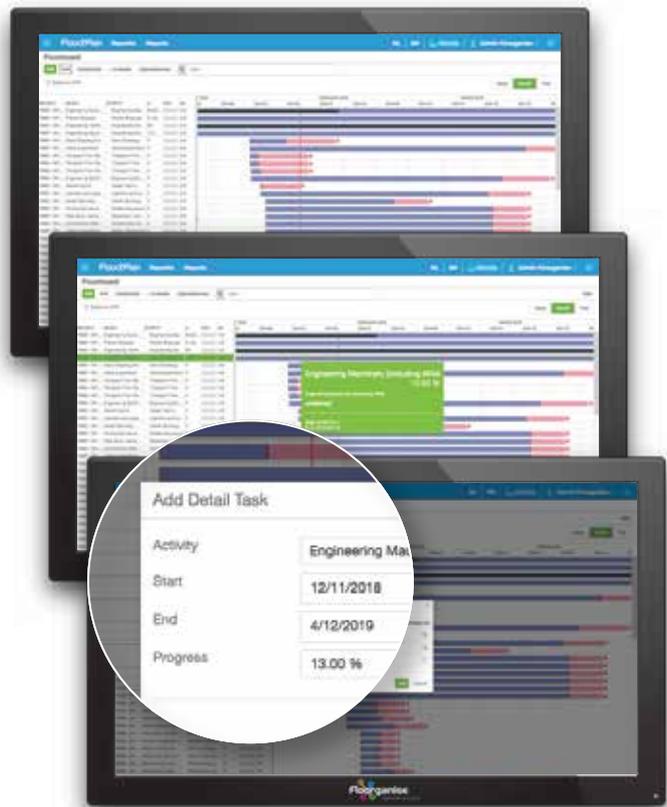
DEPARTMENT BASED DETAILING OF TASKS

Add tasks per department integrated with your project plan

2. Allow a breakdown of your project plan into smaller detailed tasks per department or subcontractor

Once your project plan is setup and shared with executing departments, they want to break your Gantt-chart up into smaller parts. Either explicit or implicit this break down always takes place. In order to keep your planning integrated it's best to allow these detailed tasks to be added as a more detailed subactivity or detail task. This allows progress and time to be submitted on these smaller tasks while simultaneously updating the progress on the higher-level tasks of the project. Directly synched with Primavera P6, MSP or your ERP system via automated connections.

Distribute your planning



- Allow executing departments to add detailed tasks or worklists
- Follow progress on either project level or detail level
- Retrieve updates on planning, progress and hours on both levels of planning
- Control the boundaries of your project level tasks with daily updates of progress and planning
- Allow progress or planning updates to be approved prior to decision making / execution

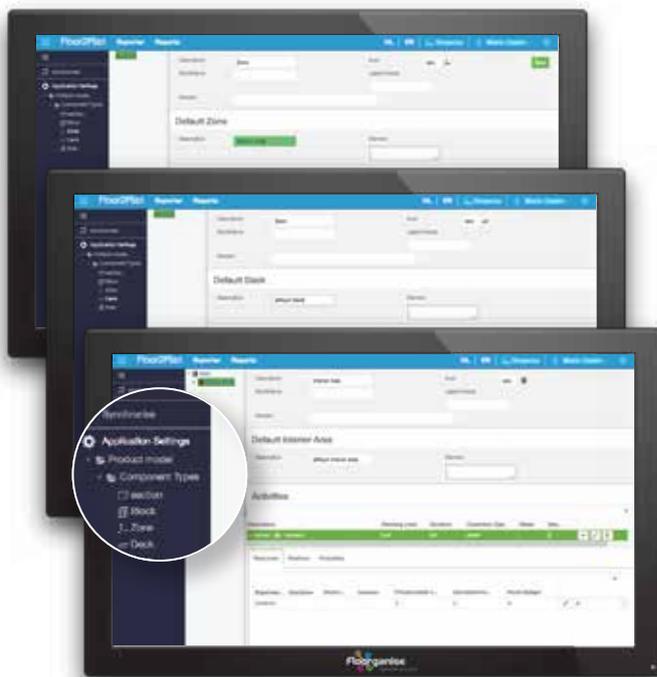


3. Add detailed tasks with the use of F2P's SMART PLANNING TEMPLATES ©

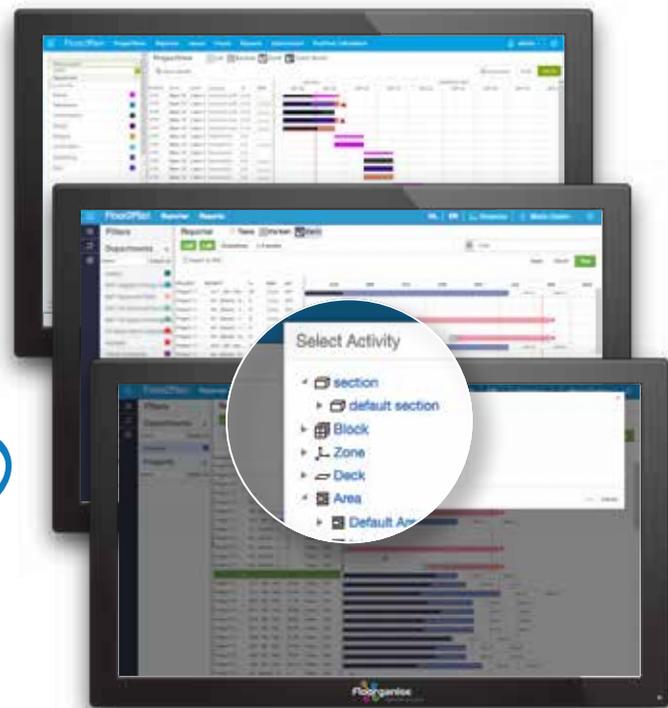
If controlling your project is the primary focus of your project plan, then there is a limit on the level of detail you can absorb in your conventional planning tool. Detailing your plan requires a lot of manual input which can perfectly be automated. That is the job of F2P's smart planning template that breaks down your milestones into smaller detailed tasks based on knowledge of the vessel you are building.



Generate your product break down structure



Further detail your current project plan per section, area, room



Following a product break down structure with an added layer of work break down enriched with the knowledge of previous projects for hours and duration.

- Select the vessel type you are building and the first part you want to plan
- Select either a block, section, area, deck or room from the library
- Select the type of block, section, area, deck or room from the library (or add one)
- Apply the phase of the building process for the object (hotwork, outfitting et cetera)
- Select the list of previously defined tasks, it's relations, dependencies and resources
- Copy the hours, duration and relations, from other vessels built, or alter them
- Connect the scheduled activities to your higher-level milestones or tasks in P6/MSP
- Distribute your project plan and all connected detailed tasks underneath to all involved inside and outside your company



AUTOMATED PLANING WITH AN INTEGRATED WBS/PBS APPROACH

Use your vessel knowledge to fully set up your project and detailed planning applying the benefits of a product breakdown structure



Set up an integrated project plan with F2P. Use our non-conventional planning tool

Following the logic from the SMART PLANNING TEMPLATES © it is also possible to skip the use of a conventional project planning tool and apply project control directly from Floor2Plan. The steps mentioned in step 3 are then extended to gain a higher-level (multi-)project overview. The benefits of F2P can be summarized into:

- One central planning and control tool that applies multiple projects and yards/sites
- Fully based on a product-break-down structure which is capable of instantly serving the information needs of all project members
- Apply an extensive library of knowledge based on detailed metrics from past projects
- Easily transfer of knowledge from past to future projects on duration and hours

Distribute your planning



Following a product break down structure
with an added layer of work break down
enriched with the knowledge of previous
projects for hours and duration



Setting up the project

Automatically add all relations
and dependencies for all tasks within
the detailed planning and
throughout different departments

2. FOREMEN

A foreman is a specialist who is also responsible for allocating the work across his team and monitoring the progress made. The primary registrations that can take place at that work (hours and progress), if not done by the team members themselves, are done by the foreman.

Floor2Plan's many functionalities offers the foreman the possibility to:

1. View work in progress

The **Floorboard** provides an instant overview of the elements still open at any particular time for the relevant department. Based on the colour code, a foreman can see whether there are any special priorities assigned to the tasks.

The progress for the specific element is shown here. KPIs can be defined for each department.

A foreman can click through here to view details of the part to be produced. The different tasks that are relevant for this are then displayed.

For each task, the foreman can create issues, request drawing information**, modify the progress*, and re-schedule tasks (planned start/planned finish)*

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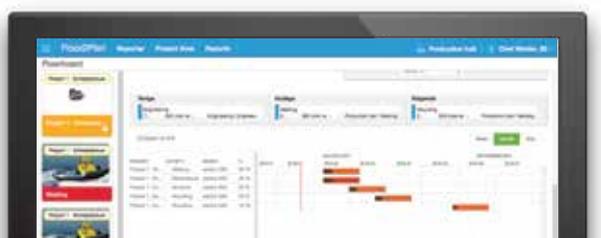


An overview of the module Floorboard



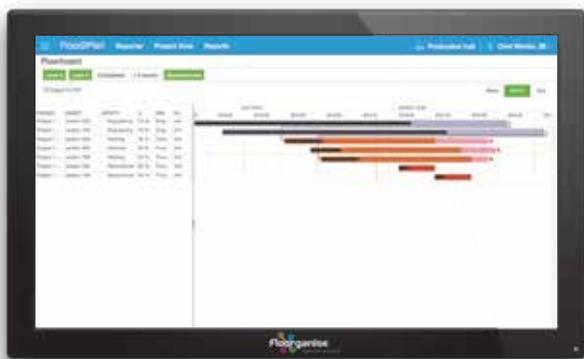
The **task details** from the Floorboard 1/2

The **Gantt chart** from the Floorboard 2/2





In the **Gantt chart** overview, the foreman can view the tasks, progress, expected overrun and the task dependencies. These are shown both under **Detail planning** and under task details.



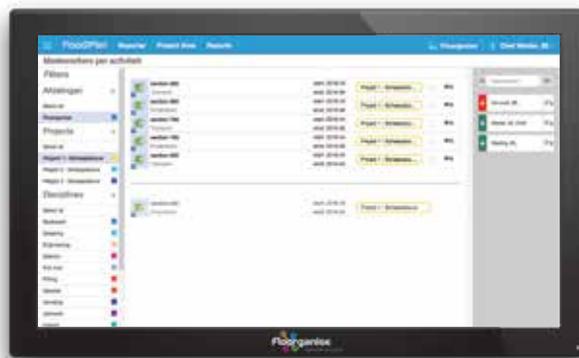
The **Detail planning** from the Floorboard

2. Allocate work in progress

The **Planboard** provides the possibility to render tasks active and to assign them to employees. Non-active tasks are not displayed for the team members for the time- and/or progress registration.

By contrast, the assigned tasks are highlighted for the team members.

At the same time, the **Planboard** acts as a guide to how much work has to be done, and by whom. This means that this screen can be used to support the day start.



An overview of the Planboard

3. Execute registrations or safeguard them

In all the modules that are used for the benefit of the foreman, options exist to report progress and/or information about scheduling.

On the Floorboard, you can define both start/finish date, the hours left, and the percentage complete.

With the Planboard, the foreman can define a task as being completed, for example during the day start if the various tasks and their status has been discussed.

For Timesheeting for the team members, as well as the hours spent on a task, the (total) progress relevant to the task can also be registered.

*) if this is possible in the drawing tool, a real-time link can be created to the drawing tool

**) if this is a task in the detail planning (level 4)

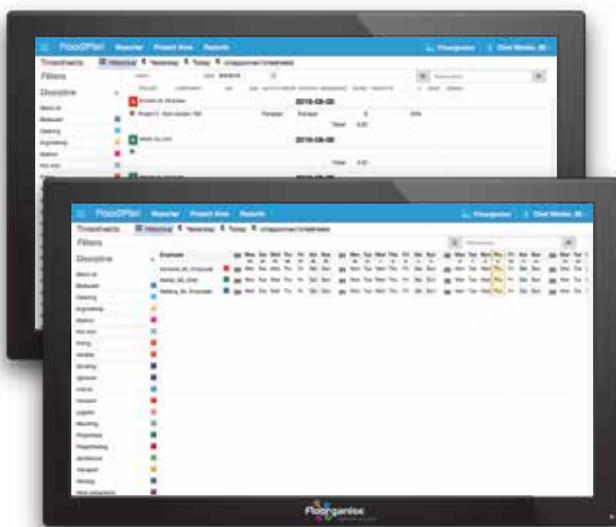


Timesheet with time and progress entered by the workers on the shop floor (via touchscreens in the production hall)

The Scurve provides a comparison, spread across weeks, of cumulative hours. Floor2Plan then shows the budgeted hours, a baseline of the budgeted hours (if relevant), the actual hours worked, and the **Earned value** in hours (physical progress x budget).

Based on the hours worked, earned value and the hours still remaining, the **Forecast** can be calculated.

The **Department Stats** consist of KPIs that are defined specifically for the department and that provide real-time insight into performance- (e.g. on time/on budget) and management figures (e.g. available hours vs. required hours).



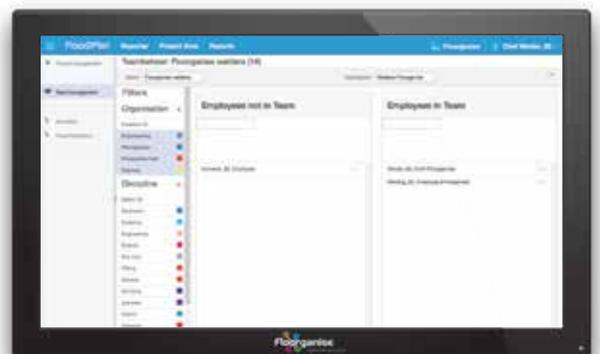
Approval of submitted time from workers is approved by the foreman

4. Acquire insight into progress and/or budget

To be able to forecast whether the activities will be completed on time, within **Floorboard** the foreman can make use of **Scurve Graphs** and **Capacity Charts**. These can be filtered by project and/or discipline.

5. Form teams

Teams can be used across the whole application so that you can filter on employees, for example to assign tasks or register hours. Via team management, the users themselves can form their teams and assign employees from the whole organisation. Additionally, in this way, someone who is working temporarily for a department can be highlighted on the screens of the foreman.



Team management functions

6. Time-tracking and progress reporting directly by production staff

- All hours and progress updated daily
- 100% of all hours are accounted for on right jobs
- Connected to time and attendance systems
- A reporting specific environment is available
- Foremen cut on bureaucratic time
- All hours updated within a minute a day (foremen < 5 min)



3. PROJECT MANAGER/ AREA MANAGER / PROJECT CONTROL

The project manager facilitates the successful execution of the project. For this, the project manager requires insight that encompasses all the different departments, subcontractors and disciplines.

Project control monitors whether a project is still under control. The characteristics can be viewed from the project perspective or the department perspective. The relevant characteristics are hours worked versus hours budgeted, earned value, expected supply date, feasibility of the current planning, number of incidents, percentage on time/on budget.

1. Acquire an overview of the progress of the project

In the **Reporter**, the project manager can see the progress across the different departments, the activities list, which can be filtered on department, discipline and/or subproduct, as well as via the **Gantt chart**.

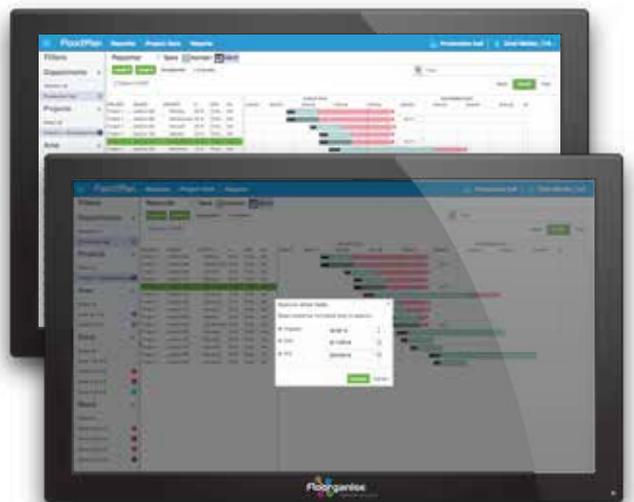
Gantt chart for the project manager



Select a detail task to submit progress

2. Approve the progress/hours/schedule made

In the **Gantt chart**, the project manager can approve the reported progress at the detail level so that this is included in the project planning.



3. Budgeting

Validating hours to go with production managers.





4. View various customized reports

Floor2Plan offers a number of standard reporting options such as the Scurve Dashboard and the Capacity Dashboard.

5. Acquire an overview of the progress of the project

A *Project* view a *Gantt chart* or *Kanban* screen.



Scurve dashboard and the Capacity Dashboard



6. Project-based and department-based KPI dashboards



4. SUBCONTRACTORS

Subcontractors share and guard milestones online

Subcontractors have a large stake in the efficiency of the shipbuilding process. In order to create aligned target setting and dependable progress reporting Floor2Plan is equipped with dedicated modules. Functions that allow for sharing the planning (via an online portal) and retrieving progress per subcontractors provide knowledgeable cooperation, objective setting, checks and balances that are an absolute must for efficient co-making.

1. High predictability in comaking

- Share and guard mutual goals
- Share planning among subcontractors
- Enable feedback on planning and issues
- Determine the accuracy of the reported progress



2. Share planning among subcontractors

Share your planning using an integral planning approach. Present your subcontractor:

- Expected milestones
- Current version of drawings
- Dependencies with other comakers
- Connect to the planning approach of a comaker (system, block or room planning)





3. Enable feedback on planning and issues

Comakers can update a planning by:

- Update progress directly in the planning
- Create subtask to specify the work (for own use)
- Synchronize with own planning solution



Specify and update progress in planning



Subcontractors synchronize the project planning with their own tooling (download/upload)

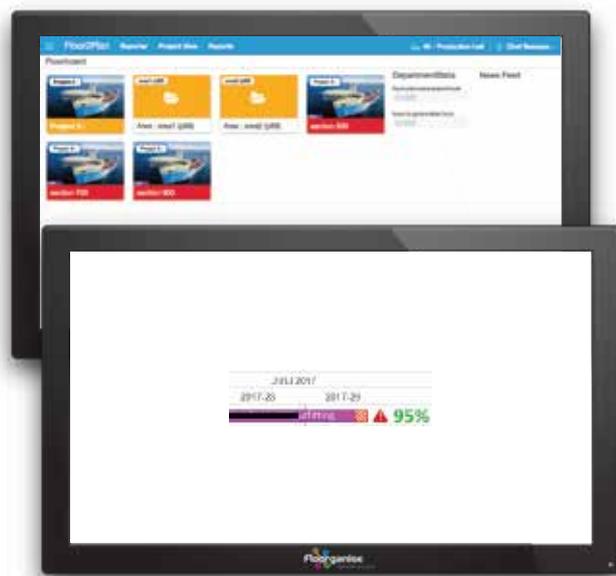
4. Determine the accuracy of the reported progress

Based on statistical data and the current situation, Floor2Plan can determine how accurate the given progress is.

So even if a task is on schedule, it can be shown as a risk.

Based on:

- Statistical data, previous task and projects
- Current progress and remaining time
- Recent activities



Determine the accuracy of the planning

5. ENGINEERING

Since pretty much all shipbuilders start building before the engineering is finalized, there is high pressure for engineers to keep up with pace of production. One of the practical issues that originate from this pressure is the lack of overview and the insights in priorities for individual drawings, their relation to work packages and the resources available and required. Floor2Plan is equipped with a broad set-up that delivers on overview and clarity.

Floor2Plan has many functionalities to enable the engineers to:

1. Acquire an overview of the priorities for engineering

With the KANBAN or gantt-chart an overview of all work-in-progress is provided for all the drawings of the engineering department. Related to their work package, priority and stage of drawing. This set-up is configured for the logic of your shipyard and the stages that are common at your yard.



2. See the dependencies for a drawing in the detail planning

Visualizations provide an overview of:

- An individual drawing and its stage of completion.
- The relation of a drawing and the work package
- The dependencies with other tasks or information needed
- Impact on production if the drawing delays (dependencies)





3. The Floorboard based on drawings

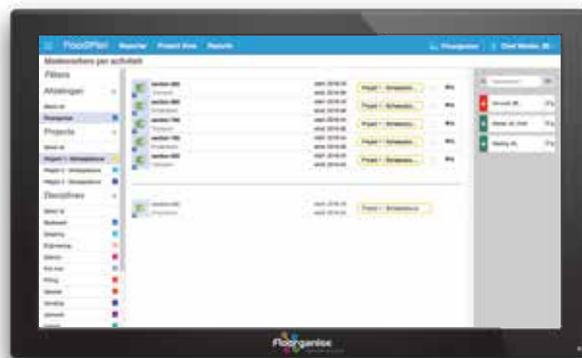
The Floorboard provides an overview of:

- Work package that the drawing relates to
- Progress made on the drawing (and its stage)
- Details from the interdependent tasks (purchasing information, client approval et cetera)



4. The planboard for engineering department

Division of work between individual engineers and their specific disciplines.



An overview of the Planboard

With the planboard, the PM engineering can define a drawing as being completed, for example during the day start if the various tasks and their status has been discussed.

For Timesheeting for the team member of engineering, as well as the hours spent on the drawing, for each of the stages, the (total) progress relevant to the drawing can also be registered.

GENERIC

INTEGRATED CONNECTIONS VIA:

- ✓ Webservices. Database Connection or File Based
- ✓ File Based such as XML, Excel, CSV or Other

3D CAD

SOLIDWORKS
SHIPCONSTRUCTOR CADMATIC

NUPI

Progress Status

Drawings
Structure
Building order

Product
Materials / Strength
Instruction

FABRICATION

nestix HEXAGON

Materials arrival time
Start finish date for jobs
Location of materials
Transportation method

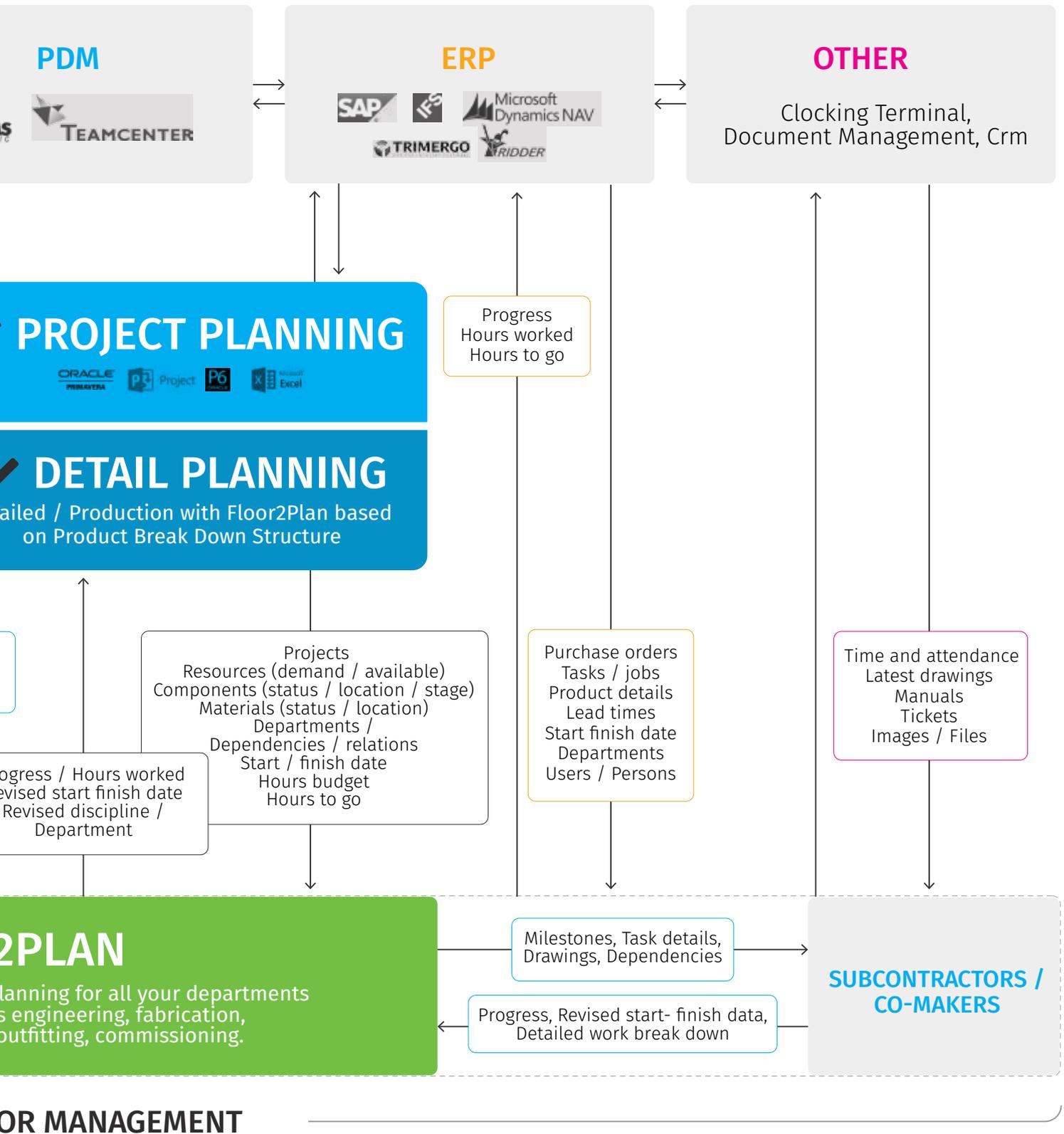
✓ **FLOOR**

Shop Floor Management and integrated p
and stages of your projects, such a
pre-outfitting, assembly, erection,

INTEGRATED SHOP FLO



YARD SETUP







WANT TO
KNOW
MORE?

Call +31613324100

Mail ronald@floorganise.com

Ronald de Vries MSc RC



Marsweg 55, 8013 PE Zwolle - The Netherlands
+31 85 4011824 - www.floorganise.com