

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Table of Contents

Glossary	2
1. Introduction to Marine Facilities Planning	4
1.1 MFP Organization	6
1.2 Set Up an MFP Account	8
2. Inventory Management – Device Database	9
2.1 Create an entry in the device database	12
2.2 Equipment Basic Data and Status	14
2.3 Barcode label	17
2.4 Equipment: Extended Master Data for Shipping	19
2.5 Equipment additional information	21
2.6 Bundling Multiple Pieces of Equipment and Multiples into a Single System	25
2.7 Creating a Template for a Device Type (Generic Equipment)	27
2.8 Maintenance	30
2.9 Repair Requests and Repair Entries (Corrective Maintenance)	34
2.10 Entry of Consumables	36
2.11 Entry of multiple consumables	38
2.12 Hazardous Materials	41
3. Planning and Execution of Movements	42
3.1 Best Practices for Logistics Related to a Departure	44
3.2 Creating a Voyage (IMS-Group Admin and IMS & Cruise)	46
3.3 Linking and Executing a Voyage (IMS-Group Admin and IMS & Cruise)	48
3.4 Create a transport (IMS-Group Admin and IMS & Cruise)	52
3.5 Link and execute a transport (IMS User as Contact Person)	54
3.6 Create a plan list and edit master data	57
3.7 Edit plan list content	61
Appendix A: Equipment Types with the Container Attribute	66
Appendix B: Export Controls	67

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Glossary

Term	Definition/Explanation
Barcode	A 9-digit identification number automatically assigned by Marine Facilities Planning for equipment, storage locations, and movement transactions. Equipment and storage locations should be labeled with a corresponding barcode sticker to enable program input via a scanner.
BAFA	The Federal Office for Economic Affairs and Export Control is the federal authority responsible for reviewing and, if necessary, approving exports of goods subject to export controls.
Consumable	Individual parts with a low purchase price and consumables in the broadest sense. No maintenance is planned for these parts. No inventory is maintained.
Consumable - Multiple	Consumables for which inventory levels and storage locations are of interest—e.g., due to longer lead times and/or high unit prices—are entered into the device database as Consumables entries with the type "Multiple." No maintenance planning is provided for these parts in the MFP.
Container Equipment	Equipment entry linked via Type to the 'Container' attribute; see Appendix A, Equipment Types with the Container attribute, for a complete list. Here, other equipment entries can be permanently assigned as contents, e.g., Zarges boxes with predefined contents and AUV floats with built-in components.
Equipment	Equipment parts with independent resource planning, location tracking, and/or maintenance requirements are entered into the equipment database as equipment. In the MFP, they receive an individual barcode for unique identification, which is also displayed on the equipment via a barcode sticker.
Generic Equipment	For device types that are available in multiple units at the institute, a Generic Equipment template is created. The basic data listed in the template is automatically available for every equipment entry of this device type. The Generic Equipment does not have a barcode, but each derived individual device receives an individual barcode.
Inventory Number	A 6-digit identification number assigned by the accounting department; the corresponding barcode labels begin with "Property of GEOMAR."

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Manufacturer	Manufacturer; every device has a manufacturer; if the device is homemade, GEOMAR itself should be entered here if applicable.
Packing List	The packing list in the MFP corresponds to a packing list. It lists all equipment, consumables, and hazardous materials that leave the institute, for example, for transport or a field trip. Packing lists are also created for longer-term operations such as deployments or equipment loans to document the whereabouts of the equipment.
Master data	Master data are data records that undergo relatively few changes across many application processes. In the MFP, these are the detailed descriptions of all equipment items and materials.
Supplier	Supplier or distributor—this field is not required for every item; leave it blank if the item was purchased directly from the manufacturer.

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1. Introduction to Marine Facilities Planning

The Marine Facilities Planning program was developed by MAAS Software for the research institutes NERC (United Kingdom) and NIOZ (Netherlands). As a software tool, it is designed to cover the entire project management process in marine research, from project proposal to onboard equipment planning. In 2016, GEOMAR became the third institute to adopt the program, initially limited to using the Inventory Management System (IMS) module in marine geodynamics. The five main areas of MFP use here at GEOMAR are currently:

1. Automated document retrieval for cruises on the Alkor for internal and external participants via ship coordination
2. Voyage planning for the FS Alkor by the ship coordination team
3. Detailed cross-group mission planning and location tracking for equipment
4. Maintenance planning and documentation for equipment
5. Automated generation of documents for export control, customs, and agents

Over time, additional international research institutes have joined as MFP users. The basic structure of the program is the same at all institutes, making a future consolidation fundamentally possible. Furthermore, this allows for further developments in parts of the program initiated by one institute to be easily adopted by the other participants. **The user documentation provided here describes exclusively the application of Marine Facilities Planning at GEOMAR.**

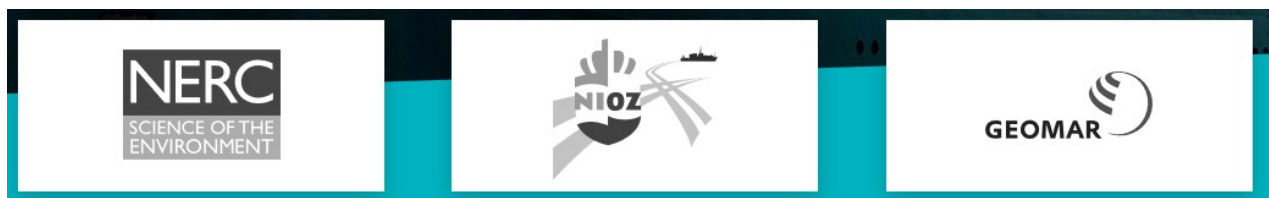


Figure 1 Marine Facilities Planning Participating Institutes

The program is structured into various interconnected modules. The following modules are currently in use at the institute:

- Project Management module for Alkor's ship coordination. The Scientist Portal is also provided here for external scientists, who can use it to manage documents related to research cruises.
- The Inventory Management System (IMS) module is a database for managing equipment parts and consumables that are (frequently) shipped or loaned out as part of research activities. The goal is to increase the quantity and quality of the master data for this equipment in the system. This simplifies workflows, such as the institute's internal export control check for each shipment. Documents issued to third parties, such as customs or agents,

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can be standardized and automatically generated by the system. Additionally, reports on the utilization of research equipment are available. **The Inventory Management System (IMS) is the subject of this guide.**

Supplementary modules that are not currently in use at the institute are as follows:

- The Mooring Configurator assists in assembling a mooring configuration and can access detailed information on the weight and buoyancy of individual components from the equipment database
- The Personnel Planning Tool enables the scheduling of technicians and ship personnel.
- The Voyage Planning Tool can be used to develop and compare optimized voyage routes and scenarios. The tool accesses information from the Project Management Module and the Scientist Portal.

The workflows in Marine Facilities Planning follow a planning and tracking logic. The program is used to create plans for equipment, and the actual implementation can then be recorded. To ensure this critical step is not overlooked, the program alerts users to upcoming scheduled movements and sends emails to the person responsible for the task, prompting them to confirm completion. By recording the execution of movement operations, all equipment locations—both past and present—can be viewed in the Tracking section, while future assignments are visible under Planning. Detailed information on the work history can also be stored as part of the equipment's usage.

The Marine Facilities Planning program is accessible worldwide from any computer as a web application via the Internet. A mobile app for iOS and Android is also available, and two scanners equipped with the app are available for use at the institute.

This manual explains how to use Inventory Management in the web application for regular users. Two additional manuals are in the works. One of them will describe how to use Inventory Management in the web application for administrators. The other will focus on using the app on mobile phones and scanners.

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1.1 MFP Organization

There are five GEOMAR-internal user groups. IMS users are users of the device database, primarily from the technical department. The IMS & Cruise profile is for users of the device database who also help organize expeditions, primarily from the scientific department. The IMS-Group Admin group is for the key user of each working group. **IMS-Group Admins notify the administrators when MFP users from their group leave the institute so that their access can be deactivated.** The administrators manage the users, have access to the Project Management module, and can adjust the settings within the software. The Customs group includes employees from the Export Control and Customs department. Below is a detailed list of the permissions for the user groups.

Permission	Customs	IMS-User	IMS & Cruise	IMS Group Admin	Administrators
All internal Edit device entries	X				X
Edit all device entries for customs data	X				X
Usage of mobile app and scanner	X	X	X	X	X
Device entries for your own group create and edit	X	X	X	X	X
Create and edit consumable entries		X	X	X	X
Templates for Creating and edit		X	X	X	X
Current EquipmentEdit storage location		X	X	X	X
Devices on outings and plan transport		X	X	X	X
Trips and Create trips			X	X	X
Device entriesExternal institutions create and edit			X	X	X
Access Scientist Portal			X		X
Contacts Create and edit				X	X

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Ground Data Create (e.g., ships, storage locations, device codes)					X
Module Project Management (Vessel Coordination)					X
User and Manage Permissions					X

Table 1 MFP Permissions

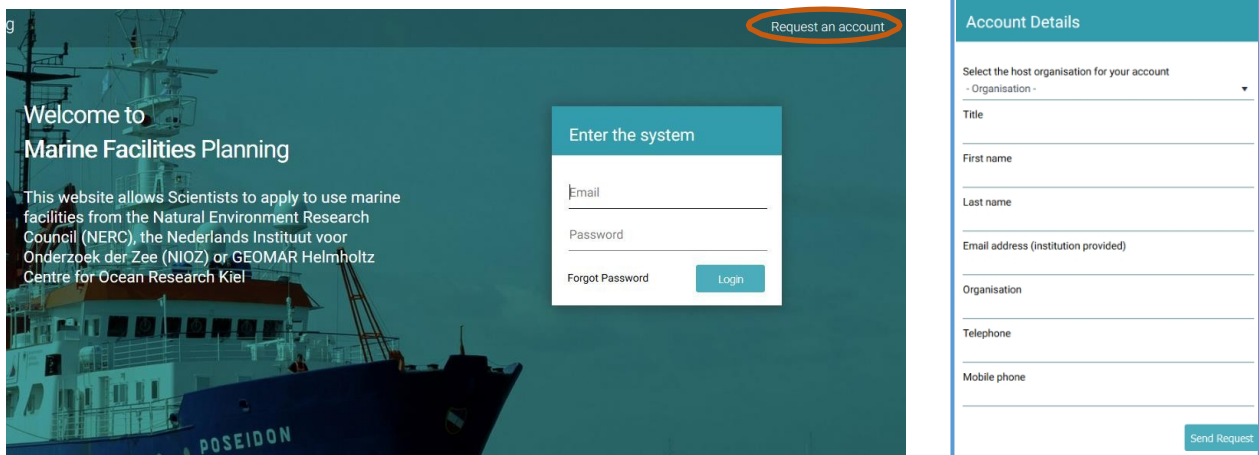
Users of Marine Facilities Planning from external institutions who collaborate with ship coordination on voyage planning for FS Alkor have access exclusively to the Scientist Portal.

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1.2 Set up an MFP account

To use Marine Facilities Planning, you need an account. This must be requested on the website <https://www.marinefacilitiesplanning.com/>.

<https://www.marinefacilitiesplanning.com/> -> Request an account -> Enter contact details -> Send Request



The screenshot shows the login page of the Marine Facilities Planning website. On the left, there is a 'Welcome to Marine Facilities Planning' message. In the center, there is a 'Login' form with fields for 'Email' and 'Password', and a 'Login' button. A 'Request an account' button is circled in red in the top right corner. On the right, there is an 'Account Details' form with fields for 'Organisation', 'Title', 'First name', 'Last name', 'Email address (institution provided)', 'Organisation', 'Telephone', and 'Mobile phone'. A 'Send Request' button is at the bottom right of the form.

Figure 2 Request Marine Facilities access

The user will then receive an email with a confirmation link. Once the new user has activated their account via the link, they can use Marine Facilities Planning. If the user permissions do not match the requirements, please contact an administrator.

The administrator also sets the homepage that is displayed to the user by default. This is the page of the module that the user will primarily use. The overview pages of all other modules approved for the user can be selected via the Module Picker in the top right corner of the screen. Using 'Edit Profile,' each user can independently change parts of their profile. This includes the home page, password, contact information, and profile picture.

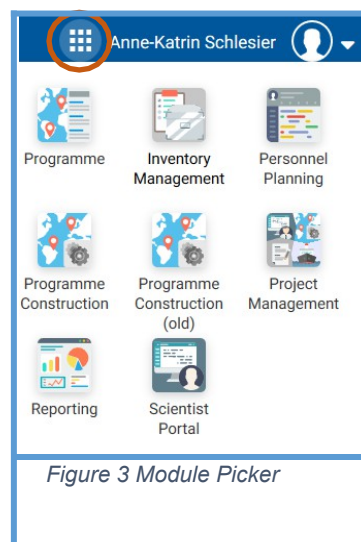


Figure 3 Module Picker

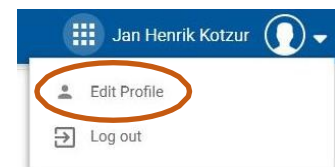


Figure 4 Customize User Profile

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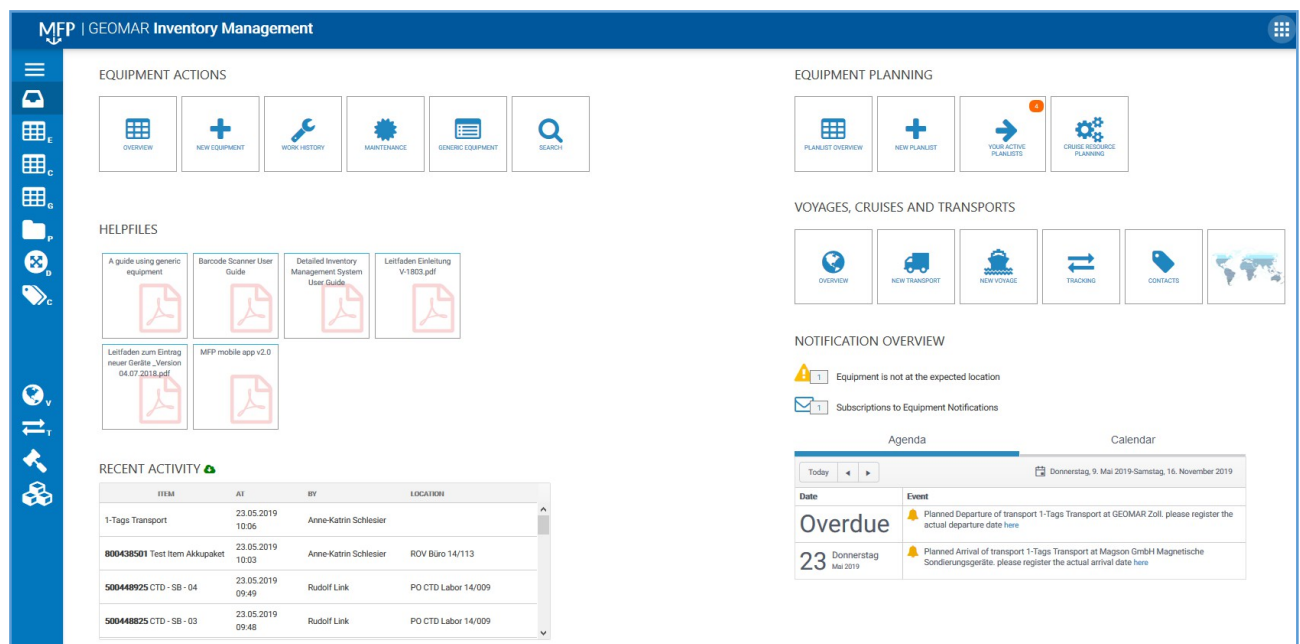
2. Inventory Management – Device Database



Inventory Management is used to manage the master data of all equipment and consumables that are (frequently) shipped or loaned out as part of research activities.

data entry efforts, e.g., when a device has multiple users, are thus avoided. This also prevents the use of different data for the same device.

A wide range of automated processes related to the global shipping and use of equipment are possible based on the database entries and are intended to simplify workflows for all parties involved. The data quality of documents that are (or must be) passed on to third parties, such as German customs, third-country customs, the BAFA, and agents, is also improved through proper maintenance, thereby simplifying and accelerating processing.



The screenshot shows the GEOMAR Inventory Management System Home Page. The interface is divided into several sections:

- EQUIPMENT ACTIONS:** Includes buttons for OVERVIEW, NEW EQUIPMENT, WORK HISTORY, MAINTENANCE, GENERIC EQUIPMENT, and SEARCH.
- EQUIPMENT PLANNING:** Includes buttons for PLANLIST OVERVIEW, NEW PLANLIST, YOUR ACTIVE PLANLISTS, and CRUISE RESOURCE PLANNING.
- HELPPFILES:** Lists various user guides and manuals, such as 'A guide using generic equipment', 'Barcode Scanner User Guide', 'Detailed Inventory Management System User Guide', and 'Leitfaden Erstellung V-1803.pdf'.
- VOYAGES, CRUISES AND TRANSPORTS:** Includes buttons for OVERVIEW, NEW TRANSPORT, NEW VOYAGE, TRACKING, and CONTACTS.
- NOTIFICATION OVERVIEW:** Shows alerts like 'Equipment is not at the expected location' and 'Subscriptions to Equipment Notifications'.
- RECENT ACTIVITY:** A table showing recent equipment movements.
- Agenda/Calendar:** A calendar view showing events like 'Overdue' and 'Planned Departure of transport 1-Tags Transport at GEOMAR Zoll'.

ITEM	AT	BY	LOCATION
1-Tags Transport	23.05.2019 10:06	Anne-Katrin Schlesier	
800438501 Test Item Akkupaket	23.05.2019 10:03	Anne-Katrin Schlesier	ROV Büro 14/113
500448925 CTD - SB - 04	23.05.2019 09:49	Rudolf Link	PO CTD Labor 14/009
500448825 CTD - SB - 03	23.05.2019 09:48	Rudolf Link	PO CTD Labor 14/009

Figure 5: Inventory Management System Home Page – Equipment Database

Every entry in the equipment database, which must be uniquely identifiable, is assigned a 9-digit barcode. This serves, on the one hand, for management within the program and, on the other hand, for the actual identification of equipment parts and storage locations using barcode labels. These also enable the use of scanners. Equipment is entered into the equipment database, along with technical, financial, and customs-related data and documents. The barcode for equipment normally begins with an 8, crates and packaging with a 5, and shipping containers with a 6. These equipment entries serve as a record of the devices' technical history (repairs, calibrations, error reports, etc.) and support maintenance planning. A selection of storage locations for the devices is stored in the equipment database; here, the barcode always starts with a 1.

To move equipment items from one storage location to another within the program, there are movement transactions. Through transports, outbound trips, and deployments, a new location is assigned for a predetermined period. The combination of devices and movement transactions

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enables global tracking of equipment usage and location (history, current position, and planning). Where appropriate, the database can be used to manage inventory levels of specific consumables. On the Inventory Management System's home page (see Figure 5), you have direct access to frequently used database functions related to equipment, planning, and movement operations. Under "Help Files," you'll find user guides for the program in German and English. Current activities within the program are displayed at the bottom of the page. The most recent activities of all users are displayed in the lower left corner. Notifications and reminders regarding your own activities in the equipment database are displayed in the lower right corner. This includes the number of devices that are not at their base storage location and how many maintenance notifications you have subscribed to. Additionally, there is a display of your own currently scheduled activities, the completion of which may need to be recorded in the program.

Access to the detailed overviews, which also provide access to comprehensive editing functions, is via the toolbar on the left side of the page. Further information on this can be found in the table below.












Menu Items	Description of 'Menu Items' Show/Hide
 Home	Opens the Inventory Management System home page
 E Equipment Overview	Opens the Equipment Overview; create a new entry for the overview using 'New' at the top left of the page
 C Consumable Overview	Opens the Consumables Overview; create a new entry for the overview using 'New' at the top left of the page
 G GroundData	Opens the Basic Data Overview
 P PlanList Overview	Opens the PlanList overview; create a new entry for the overview using 'New' in the top-left corner of the page
 D Deployment Overview	Opens the Deployment Overview; create a new entry for the overview using 'New' in the top-left corner of the page
 C Contacts and Organisations	Opens the overview for contacts and organizations; create a new entry for the overview using 'New' at the top left of the page
 V Voyages and Transports	Opens the Outbound and Transport overview; create a new entry for the overview by clicking 'New' in the top-left corner of the page
 T Tracking	Opens work window for manual location relocation, tracking, and planning overview
 Admin	Opens the administrator overview
 Project Management Admin	Opens the Project Management Administrator Area

Table 2 Database sections of the Inventory Management System

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On the detailed overview pages, the function for creating a new entry is located in the top-left corner of the view. An existing entry can be edited by selecting an entry from the overview and clicking "edit." For orientation in the following chapters, the icon from the toolbar that leads to the corresponding database area is displayed at the beginning of each section.

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2.1 Create an entry in the device database



Before adding an item to the device database, you should verify whether an entry already exists to ensure data quality. The following options are available for this:

- Consult with colleagues
- Check whether the item is already marked with an MFP barcode label
- Search the database in the Equipment Overview and Consumables Overview sections for the device name or serial number. The serial number field in the MFP is a free-text field. There is no automatic check to see if the serial number has already been assigned in the program.

If the device is already registered as equipment but does not yet have a sticker with the MFP barcode, a sticker should be applied retroactively if practically possible.

Common **hazardous materials are already stored as ground data in the device database**; administrators can create additional entries as needed. UN number, class, unit of measurement, and other detailed information are available. The hazardous materials stored in the basic data can be added directly to a packing list and are marked there with a red lightning bolt⚡. Since no inventory is maintained for hazardous materials, their availability for packing lists in the system is unlimited. Actual availability should be verified by the user.

To create a new item in the equipment database, you must first select whether it is equipment, consumables, or multiple-unit consumables. For equipment (marked with ⚙️ or ⦿),

Consumables (marked with ⚡) and Multiples (marked with 🌿) have different information stored in the database; detailed descriptions are provided in the following sections.

The selection of an entry type is based on whether unique identification of the item is required and whether there may be multiple such items in the institute's inventory. The selection is made according to the flowchart.

Creating an Equipment entry is always required if the manufacturer has already assigned a serial number to the device. Devices identified as dual-use goods or military equipment under export control are also entered into the database with the Equipment entry type.

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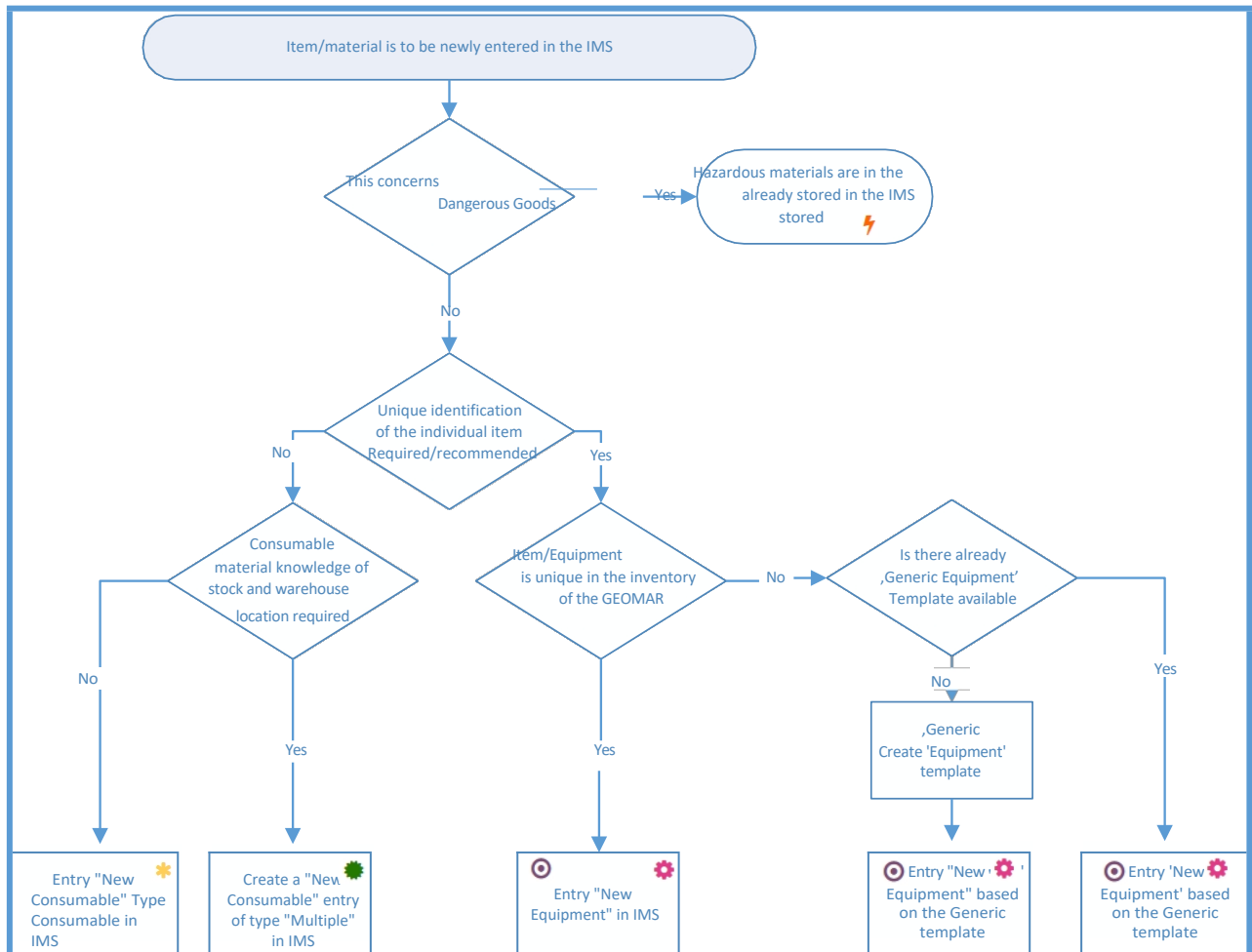


Figure 6 Flowchart: Entry Type in the Equipment Database – Equipment, Consumables, and Multiples

For large, complex devices, the question arises as to whether they should be included in the device database as a single unit, or whether separate entries should be created for the individual components. If a component is typically stored separately from the system, or if individual shipment—e.g., as a spare part—is a possibility, or if the part has its own maintenance requirements, it receives a separate entry. The individual equipment entries can then be permanently assigned to a system within the equipment database. This structure is also necessary from an export control perspective, as both the individual components of a system and the entire system may be subject to foreign trade restrictions; see Appendix B: Export Control.

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2.2 Equipment Basic Data and Status



You can find an overview of the active and archived devices already managed in the MFP under Equipment Overview. For equipment, the status "Active" applies to the active device inventory. For archiving, "Discarded" applies to disposed or 'Lost' for lost devices.

Creating an Equipment Entry and Setting the Status in Three Steps:

1. Create the entry with the basic data of the device or item
2. Archiving an entry

1. Create the entry with the basic data of the device or item

Equipment Overview -> New -> Fill in required fields
and Financial -> Fill in required fields

Alternatively

Home -> New Equipment -> Fill in
required fields and Financial -> Fill in required
fields



Figure 7 Create Equipment Entry

- **Type:** The equipment type is classified using the dropdown menu. If templates for individual pieces of equipment have already been saved for a specific equipment type, the system offers these as optional selections under "Generic Equipment." For more information, see Chapter 2.7 Creating a Template for an Equipment Type (Generic Equipment).

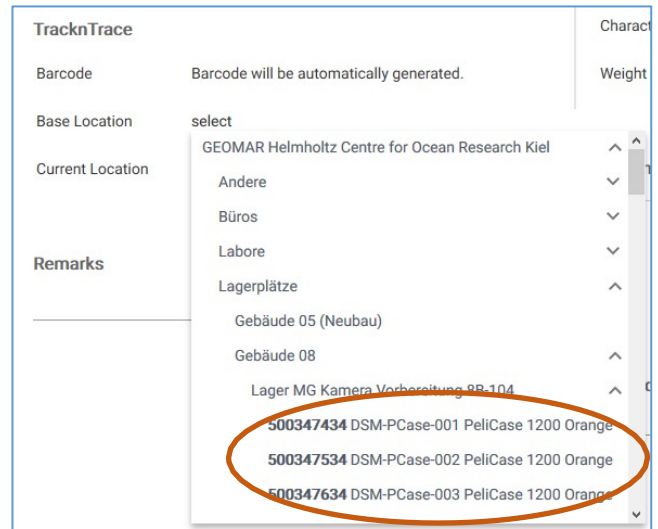
In addition, the classification in the Type section determines whether the equipment can subsequently serve as a container for other parts or not. Appendix A, Equipment Types with the Container Attribute, lists all 'Type' classifications that can be used to bundle multiple entries into a single system or that can serve as containers for other parts. A normal equipment entry is marked, e.g., in a plan list, with a pink gear icon ⚙️. A container equipment is marked with a purple circle with a dot ⦿.

- **Name:** A generally understandable description of the device, preferably in German, including the model number (if available, as per the data sheet)
- **Organization & Group:** The institute and the user's research group are preset as the device owner.

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- **Base location:** The base storage location where the device should be kept when not in use is selected from the dropdown menu's tree structure. This can be either a storage location on a ship or here at the institute. Container equipment, such as AUV and ROV frames or PeliCases (see figure), can also be selected as the base storage location here. For further details, see Chapter 2.6: Bundling Multiple Pieces of Equipment and Multiples into a System.

The "Base location" entry is automatically adopted as the "Current location" when saving the equipment entry, unless a different location is specified.



Barcode	Description
500347434	DSM-PCase-001 PeliCase 1200 Orange
500347534	DSM-PCase-002 PeliCase 1200 Orange
500347634	DSM-PCase-003 PeliCase 1200 Orange

Figure 8 Selecting container equipment as a storage location

- **Financial - Net Purchase Price:** Enter the purchase price excluding taxes. If the purchase was made several years ago and the price is unknown, an estimated value can be entered here. For self-built devices, consult with financial accounting regarding the price. The currency Euro is automatically preselected for the price.
 - **Financial - Purchase date:** Enter the purchase date; if the purchase was made several years ago, an approximate date is sufficient.
- > Save
- **Barcode:** When you save, the MFP automatically generates a barcode, which is then displayed on the Details page.



Print a barcode label for each entered device as soon as possible and attach it to the device for identification; see the following chapter.

2. Archiving an Entry

Equipment entries are automatically created with the status "Active." If a device is disposed of or lost, this status must be set to "Discarded" or "Lost" accordingly. This ensures it is no longer available for further planning, and the record is archived. Archived equipment can be reactivated at any time by changing the status again. The user who performed the action and the date of the status change are saved and can be viewed in the status change history.



If equipment subject to export control licensing is disposed of or lost, please contact the Export Control and Customs Department to coordinate the necessary documentation with the BAFA.

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Equipment Overview -> Select Equipment Entry -> Edit -> Change Status to Discarded or Lost -> Save -
> Enter mandatory reason for status change
-> Save

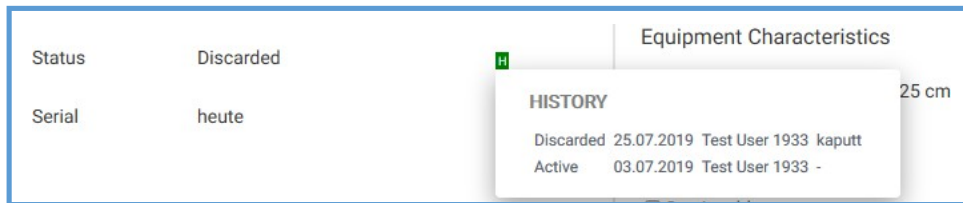


Figure 9 Equipment Status Change History

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2.3 Barcode Label



A special printer is available for printing the barcode labels. It is located in the TLZ, in a technical laboratory adjacent to the workshop (Room 14/012). The associated PC workstation is freely accessible to all MFP users at the institute. A sign with the general username and password is posted on the computer. **A quick guide for printing barcode labels is available at the printer**

Ready!

Printing and applying barcode labels involves three steps:

1. Locate the MFP equipment for which the barcode label is to be printed
2. Print the barcode label using ZebraDesigner Pro
3. Apply the barcode label

1. Locate the MFP equipment for which the barcode label is to be printed

Start the PC -> see the label on the computer for the general username and password -> open MFP online and log in -> Equipment Overview -> Select Columns

- **Barcode:** Make sure the "Barcode" checkbox is selected so that it appears in the overview.
- Select additional columns that are helpful for filtering the equipment entries for which labels are to be printed, e.g., Serial Number, Location, or Manufacturer

2. Print barcode labels with ZebraDesigner Pro

Desktop icon for 'Geomar Label Template' -> Template opens in ZebraDesigner Pro -> Print -> Fill out the prompt window -> Print

- **Do not change anything in the template!**

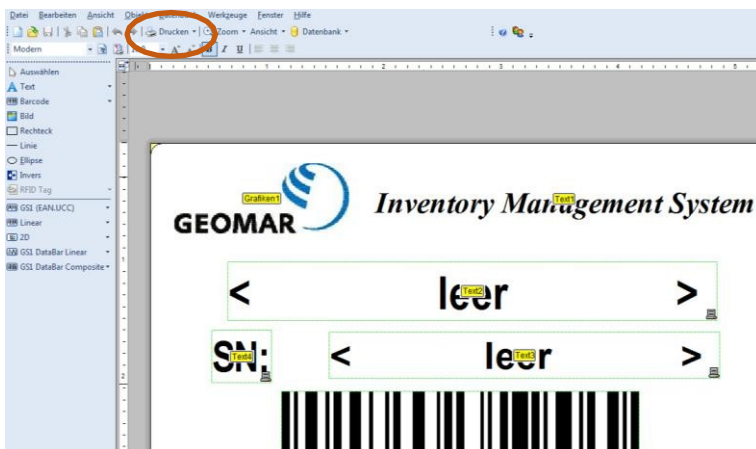


Figure 10 Label template in ZebraDesigner Pro

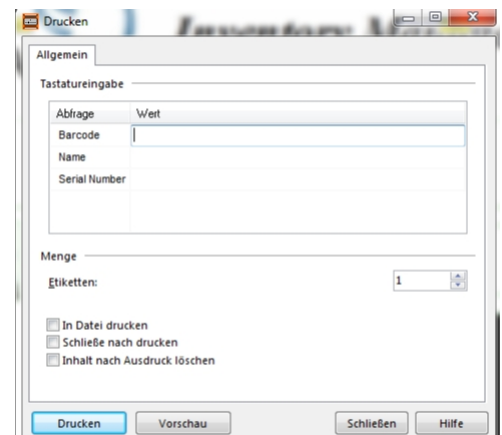


Figure 11 Barcode label dialog box

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- **Barcode, name, and serial number (if applicable):** Copy and paste from the device database into the dialog box and delete any unnecessary spaces in the entries

Automated batch printing of barcode labels for multiple pieces of equipment is currently being developed with the software provider. Please contact the MFP administrator if needed.

3. *Applying barcode labels*

- The labels are seawater-resistant.
- Thoroughly clean the surface to be labeled beforehand. The cleaner the surface, the better the adhesion.

Adapt the application of the labels to the situation

- To ensure the barcodes can be read easily by a scanner, the labels must be applied to a surface with as little curvature as possible
- Apply multiple labels to large devices
- For devices that are exposed to increased environmental stress but are assigned to a fixed transport vehicle, e.g., Heatflow lance, also apply the device barcode to the transport vehicle

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2.4 Equipment extended master data for shipping



In addition to the required fields for an equipment entry, the in Chapter 2.2, "Equipment Basic Data and Status," there is additional information required for shipment processing and the associated customs clearance and

export control. These must be entered into the system in a timely manner, at the latest before the first shipment using MFP-based documents.

The entry of the extended master data relevant to shipping is made on five different equipment pages:

1. Details
2. Financial
3. Customs
4. Documents
5. Contents – optional

1. Details

Equipment Overview -> Select equipment entry -> Details -> Edit -> Fill in shipping-related master data

- **Serial:** Enter the serial number assigned by the manufacturer.
 - **Current Location:** Select the storage location where the device is currently located from a dropdown menu. This can be a storage location here, on a ship, in transit or on a trip, a deployment, or a contact address. Do not use "Vehicle."
 - **Dimensions:** Enter the length, width, and height of the item in centimeters.
 - **Weight:** Enter the item's net weight in kilograms here. This information is used by the MFP to calculate the total weights of packages/containers and must therefore be accurate.
 - **Hazardous Characteristics:** Select the hazardous material properties of the equipment from a drop-down menu. This information is transferred by the MFP to packing lists and reports for the Export Control and Customs Department.
- > Save

2. Financial

Equipment Overview -> Select equipment entry -> Financial -> Edit -> Fill in shipping-related master data

- **Supplier:** Enter the supplier or distributor here, if applicable. Leave this field blank if the equipment was purchased directly from the manufacturer.
- **Manufacturer:** Enter the manufacturer here. If the equipment was built in-house, enter GEOMAR here and also enter the keyword "In-house" in the "Remark" field on the "Details" page.

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-> Save

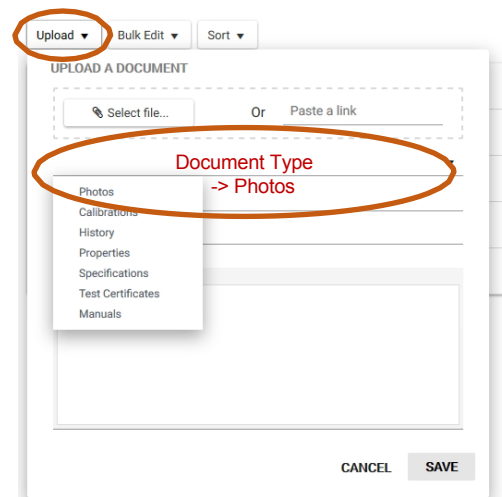
3. Customs

This page contains information on customs and export controls and is processed exclusively by the responsible department.

4. Documents

Equipment Overview -> Select equipment entry -> Documents -> Upload a photo of the device for easier identification

- **Upload:** Select file -> Select the photo (in a common image file format, e.g., jpg, png, gif) to be uploaded to the MFP and select the document type (Location) 'Photos' from the dropdown menu. -> Save
- Documents marked as document type 'Photos' and in a common image file format are displayed as images on the equipment's details page. This allows the user to see what the device looks like immediately upon opening an equipment entry.



5. Contents - optional

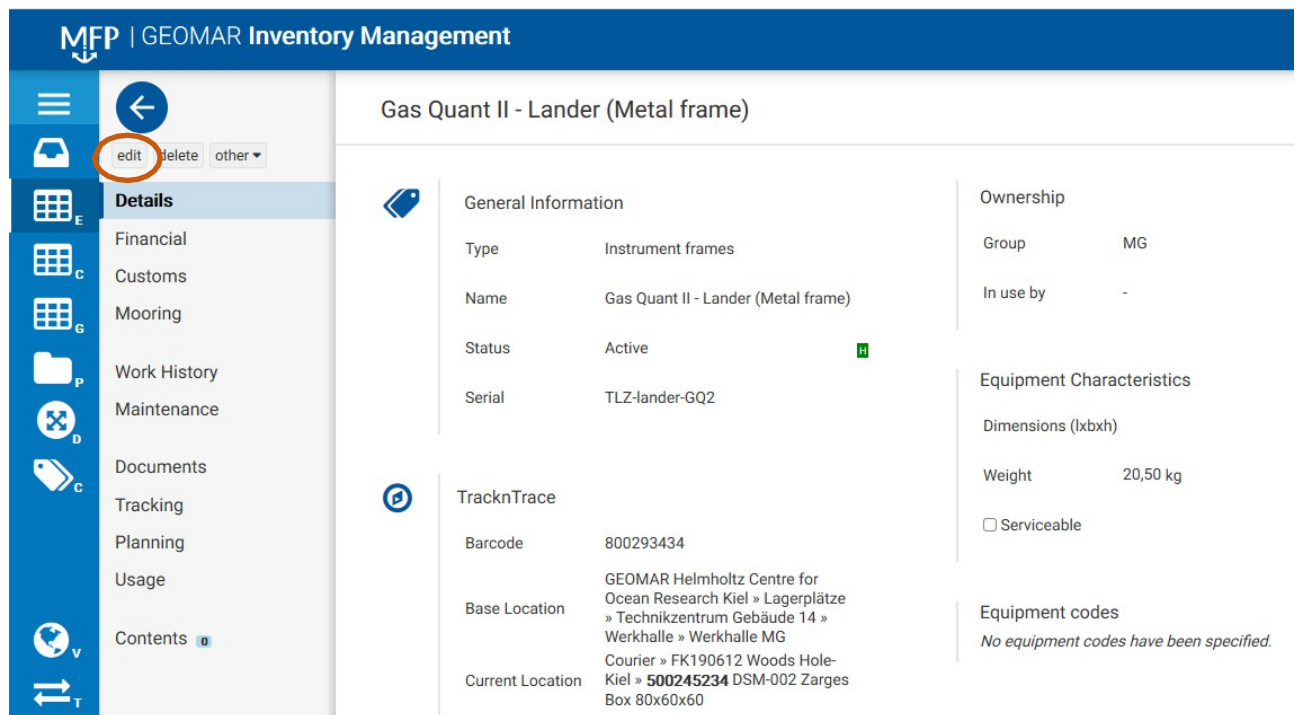
An equipment entry with the 'Container' attribute can have other equipment entries permanently assigned to it as contents. For example, Zarges boxes with standard contents or an AUV with standard equipment can be automatically transferred in their entirety to planning lists in this way, and the assignments are visible in the derived documents, e.g., packing lists. For further details, see Chapter 2.6 " : Bundling Multiple Equipment Items and Multiples into a System."

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2.5 Equipment Additional Information



In addition to the required fields and the extended master data for shipping, user-specific additional information about the equipment can be entered. To ensure that every user can make an informed decision about entering this additional information for their device, these options are described in detail in this chapter.



MFP | GEOMAR Inventory Management

Gas Quant II - Lander (Metal frame)

edit delete other

Details

- Financial
- Customs
- Mooring
- Work History
- Maintenance
- Documents
- Tracking
- Planning
- Usage
- Contents

General Information

Type	Instrument frames
Name	Gas Quant II - Lander (Metal frame)
Status	Active ■
Serial	TLZ-lander-GQ2

Ownership

Group	MG
In use by	-

Equipment Characteristics

Dimensions (lxbxh)	
Weight	20,50 kg
<input type="checkbox"/> Serviceable	

Equipment codes

No equipment codes have been specified.

TracknTrace

Barcode	800293434
Base Location	GEOMAR Helmholtz Centre for Ocean Research Kiel » Lagerplätze » Technikzentrum Gebäude 14 » Werkhalle » Werkhalle MG
Current Location	Courier » FK190612 Woods Hole-Kiel » 500245234 DSM-002 Zarges Box 80x60x60

Figure 12 Equipment entry for further processing

Generally, 8 equipment pages are available for entering and viewing additional information; additionally, there is the Contents page for container equipment and the Mooring page for devices that can be used in moorings:

1. Details
2. Financial
3. Work History
4. Maintenance: See Chapter 2.8 Maintenance
5. Documents
6. Tracking
7. Planning
8. Usage
9. Contents - optional
10. Mooring - optional

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

1. Details

Equipment Overview -> Select equipment entry -> Details -> Edit -> Fill in additional information as needed

- **Remarks:** Text field for comments.
 - **In Use by:** Here you can select a specific person who is currently using the equipment.
 - **Equipment Codes:** Device-specific codes (e.g., password, ping, release code, trigger code) relevant to the operation of the device can be stored here.
- > Save

2. Financial

Equipment Overview -> Select equipment entry -> Financial -> edit -> Fill in additional information as needed

- **Order number:** The supplier order number can be entered here.
 - **Requisition number:** The internal order number can be entered here.
 - **Funding:** The funding institution can be entered here.
 - **Project:** Enter the project funding here.
 - **Asset number:** The inventory number assigned by the accounting department for newly acquired items and equipment can be entered here. This also applies to equipment built in-house by the workshops. If multiple individual parts with their own inventory numbers are assembled into a single piece of equipment, all inventory numbers for that equipment must be entered here. The inventory number serves as the interface with the accounting department and is displayed on the equipment with a dedicated barcode sticker ("Property of GEOMAR"). If this number is entered in the equipment database, the current location of the equipment can be determined during an inventory using Marine Facilities Planning and reported to the accounting department.
 - **Asset note:** Additional notes regarding the inventory can be entered here.
- -> Save

3. Work History

Equipment Overview -> Select equipment entry -> Work History -> View equipment usage history or Add -> Create entry for equipment usage history

- **Type - Maintenance:** Enter maintenance event with execution date, validity expiration date (Validity), and execution notes (Note).
 - **Type – Usage/Deployment:** Enter usage with start date, end date, and notes.
- > Save

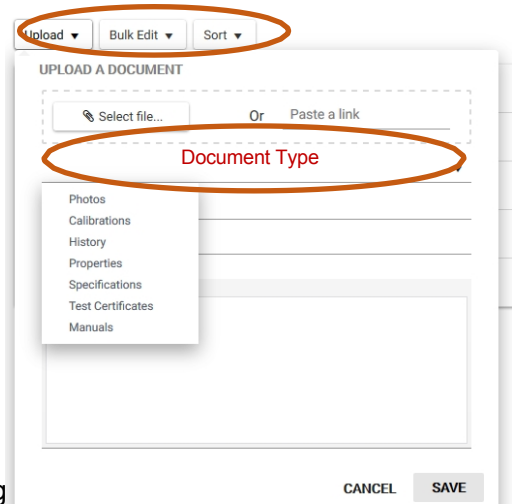
4. Maintenance: See Chapter 2.8 Maintenance and Servicing

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

5. Documents

Equipment Overview -> Select equipment entry -> Documents -> View, sort, and edit existing documents or upload new documents

- **Upload:** Select file -> Select the document to be uploaded to the MFP and choose the document type (Location) from the dropdown menu. -> Save
- **Upload -> Photos:** Documents marked as the document type 'Photos' and in a common image file format (e.g., jpg, png, gif) are displayed as images on the equipment's details page.
- **Bulk Edit:** Select document entries for editing by checking the boxes, then delete them in bulk or download them as a ZIP file.
- **Sort:** Sort all entries by name or by creation date.



If the equipment entry belongs to a generic template, general instructions, are stored in the generic template and thus transferred to individual equipment entry. specific documents, such as calibration reports, are stored in the individual equipment entry.



For devices subject to export controls, only general information may be uploaded. Information with a level of detail that enables the (partial) reproduction of the device must not be uploaded.

6. Tracking

Equipment Overview -> Select Equipment Entry -> Tracking -> View **Equipment Logistics History** as a Chronological List






	Home Institution Storage Location
	Internal contact
	External contact
	Transport -> Optional redirection to associated transport
	Outbound -> Optional forwarding to associated outbound

Table 3 Legend for logistics history

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

7. Planning

Equipment Overview -> Select equipment entry -> Planning -> View equipment planning & logistics history in calendar format or 'Plan or register a maintenance event' -> Enter maintenance appointment




	External Contact
	Transport -> optional redirection to associated transport
	Outbound -> Optional forwarding to associated outbound

Table 4 Legend for Planning

- **Plan or register a maintenance event:** Enter the description, start date, end date, and validity period of the appointment blocker for maintenance -> Save
Use maintenance entries in the Planning area exclusively as appointment blockers; for detailed management of maintenance work, see 2.8 Maintenance and Maintenance

8. Usage

Equipment Overview -> Select equipment entry -> Usage -> Add -> Create entry for equipment user history

- **Error in the MFP:** Currently not possible; will be corrected in the next update.

9. *Contents: See Chapter 2.6 Bundle multiple pieces of equipment and multiples into a single system*

10. Mooring – optional

The additional information that can be entered here is used for the Mooring Configurator. This module is currently unavailable, so entering data is not useful at this time.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2.6 Bundling multiple devices and multiples into a single system



In practice, there are often multiple devices/items that belong to a fixed system/packaging unit. This applies to Zarges boxes with predefined contents, as well as ROV frames with built-in

components. These can be mapped in the MFP to subsequently simplify the creation of bill of materials. To do this, a container piece of equipment is assigned to the individual components as a common base location.

Combining multiple pieces of equipment and multiples into a system is done in four steps:

1. Prerequisite: Check container equipment
2. View the contents of the container equipment
3. Add additional equipment and multiples to the host equipment

1. Prerequisite: Check container equipment

Equipment Overview -> Select Equipment

- **Contents page exists:** The equipment meets the requirements for container equipment. The lowercase number next to "Contents" indicates how many devices are currently assigned to it.
- **Contents page not available:** The equipment does not meet the requirements for container equipment; 'Type' must be adjusted

Equipment Overview -> Details -> Edit

- **Type:** Select a suitable device type/item type with the 'Container' attribute here; these are essentially frame, hull, and all options in the winches, boxes and other packing, and sea containers sections. For a detailed list, see Appendix A: Equipment Types with Container Attribute

-> Save -> The Contents page appears in the list

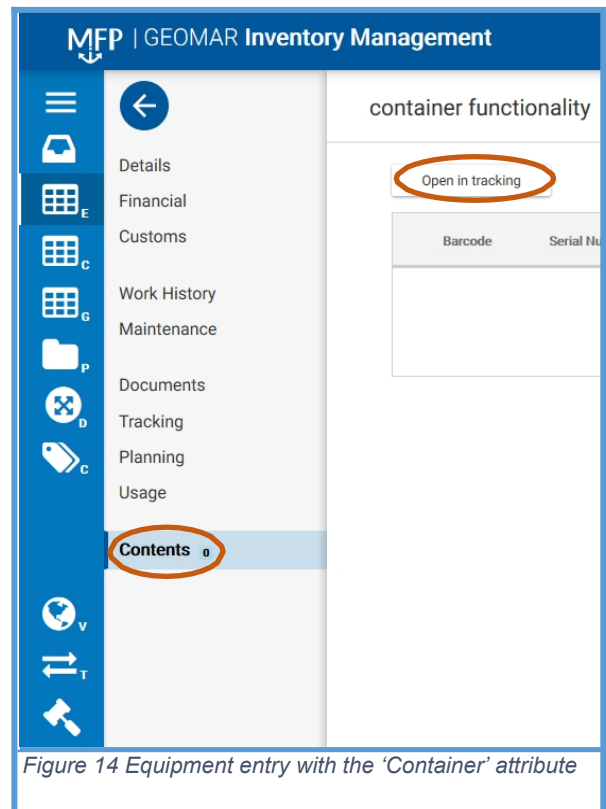


Figure 14 Equipment entry with the 'Container' attribute

2. View the contents of the container equipment

Equipment Overview -> Select Container Equipment -> Contents -> View the contents list for the container equipment

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3. *Add equipment to the container equipment*

Equipment Overview -> Select **container equipment** -> Details -> View and **note the Current Location**

Equipment Overview -> Select the equipment to be added to the container equipment -> Details -> Select the container equipment's storage location as the Base Location and select the container equipment there -> Save

If the equipment is currently located on/in the container equipment, also adjust the Current Location accordingly:

Equipment Overview -> Select the equipment currently stored on/in the container equipment -> Details -> Search for the container equipment's storage location as the Current Location and select the container equipment there -> Save

4. *Add multiples to the container equipment*

Equipment Overview -> Select the container equipment -> Contents -> Open in tracking -> Move to -> Drag and drop the equipment and multiples to be assigned to the container equipment from right to left -> The equipment and multiples are added to the container

- **Left view pane:** Container equipment storage location; if applicable, equipment and multiples already assigned to the container equipment are displayed here.
- **Right-hand view pane:** Here, you can access all locations for equipment and multiples known in the MFP, along with the devices and items currently registered there. These include storage locations at the institute as well as ships, transports, and outings, deployments, and external contacts.
-  **Keyword search for equipment and locations!**
- : Export a customs report for the displayed storage location to Excel.

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2.7 Create a template for an equipment type (Generic Equipment)



Generic Equipment are templates for device types that exist in multiple instances. You can find an overview of existing templates under GroundData -> Generic Equipment. All data from a Generic Equipment template is transferred to the derived individual equipment entries and cannot be modified within them.

Creating and using a new Generic Equipment entry involves three steps:

1. Creating the entry with the basic data of the equipment type.
2. Complete the entry with additional master data and documents for the equipment type.
3. Use the Generic Equipment for an equipment entry

1. Create the entry with the basic data for the equipment type

GroundData -> Generic Equipment -> New -> Fill in required fields

- **Type:** The device type is selected from the dropdown menu
 - **Name:** A generally understandable name for the device, preferably in German, including the model designation as per the data sheet
- > Save

Alternatively, a Generic Equipment entry can also be derived from an existing equipment entry.

Equipment Overview -> Select equipment entry -> other -> Generate Generic Equipment

All data belonging to a Generic Equipment is automatically transferred from the entry. If the entry is already derived from a Generic Equipment, the warning 'Equipment has already a generic type' appears and the action cannot be performed.

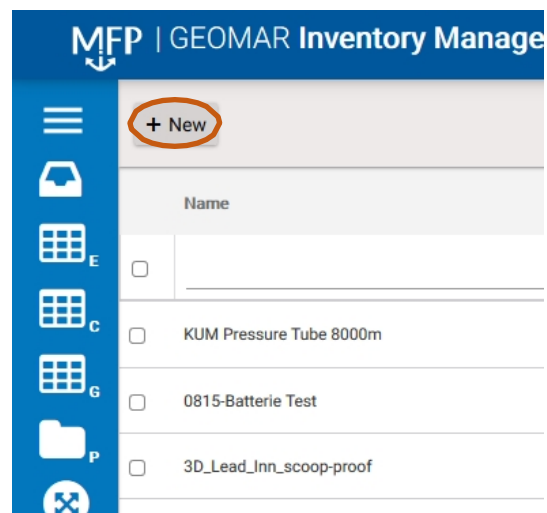


Figure 15 Create Generic Equipment

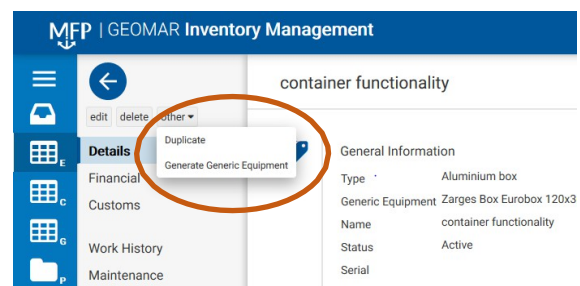


Figure 16 Derive Generic Equipment from an existing equipment entry

2. Complete the entry with extended master data and documents for the equipment type

GroundData -> Select Generic Equipment entry -> Details -> Edit -> Add master data (dimensions, weight, manufacturer, and comments if applicable) -> Save

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Attach documents to a Generic Equipment entry:

Documents stored in the generic template are passed on to all individual equipment entries.

GroundData -> Select Generic Equipment entry -> Documents -> Upload -> Select document -> Assign group (dropdown: Photos, Calibrations, History, Properties, Specifications, Test Certificates, Manuals) -> Optionally assign a new document name (Document Name) -> Save

View all saved documents either sorted by group (Group) or as a simple list (Flat).



For devices subject to export controls, only general information may be uploaded. Information with a level of detail that enables the (partial) reproduction of the device must not be uploaded.

For Generic Equipment of the type 'Mooring systems', additional information can be entered on the 'Mooring' page to facilitate the use of the Mooring Configurator. This module is currently unavailable, so entering data at this time is not advisable.



Fields left blank in the template cannot be filled in the individual equipment entry. Fields that cannot yet be filled in must be added later. Subsequent adjustments to the template are applied to every equipment entry created based on a Generic Equipment item.

3. Using Generic Equipment for an Equipment Entry

Using Generic Equipment when creating a new equipment entry:

Equipment Overview -> New -> Type -> Select Generic Equipment -> the data from the template is automatically applied to the equipment entry -> Save

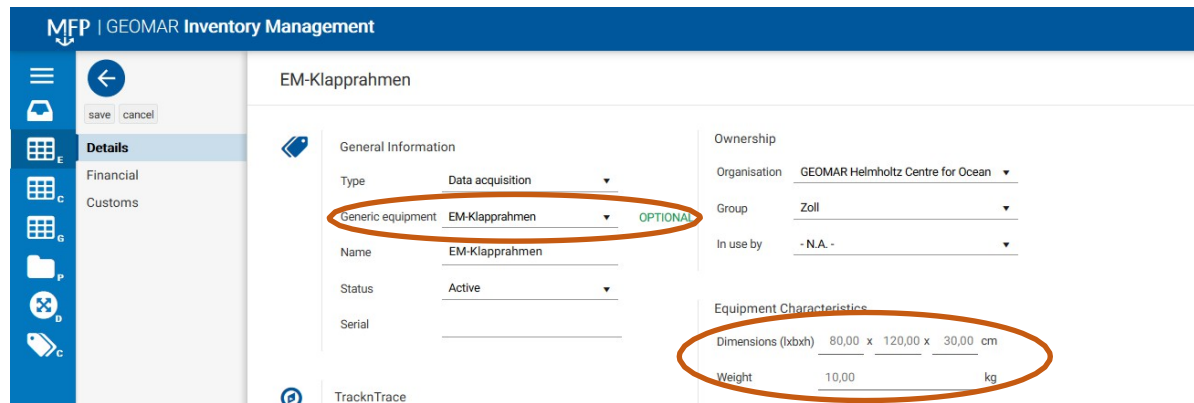
Linking a registered piece of equipment to a generic template after the fact:

Equipment Overview -> Select Equipment -> Details -> Edit -> Select Generic Equipment

-> The connection to the generic equipment is established; the template's data is automatically imported and may overwrite any existing data -> Save

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

All information displayed in gray rather than black text is taken from the generic equipment and cannot be changed in the individual equipment



The screenshot shows the 'EM-Klapprahmen' equipment details page. The 'Generic equipment' dropdown menu is set to 'EM-Klapprahmen' and is circled in orange. The 'Equipment Characteristics' section shows dimensions (80,00 x 120,00 x 30,00 cm) and weight (10,00 kg), also circled in orange. The page includes a sidebar with navigation options like 'Financial' and 'Customs', and a top navigation bar with 'save' and 'cancel' buttons.

Figure 17 New Equipment Access to Generic Equipment

Disconnecting a piece of equipment from a generic equipment:

Equipment Overview -> Select Equipment -> Details -> Edit -> Reset Generic Equipment to 'Select Generic Equipment' -> The connection to the Generic Equipment is deleted; the data taken from the template is not deleted but can be edited afterward -> Save

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2.8 Maintenance



In the equipment database, a maintenance schedule can be created for each piece of equipment and the execution documented. This enables automatic reminders for the user regarding upcoming maintenance intervals. If maintenance cycles are exceeded, warnings are displayed in the schedule.

Each maintenance routine is defined by two components: the type of maintenance activity and the execution interval. For options and explanations, see the following two tables.

Activity (English)	Activity (German)	Explanation
Inspection	Inspection	(Visual) inspection to determine the current condition of the equipment
Test	Test	Checking whether the device operates/functions within the specified parameters
Service	Maintenance	Measures to delay deterioration and ensure the expected device performance
Calibration	Calibration	Reproducible determination and documentation of the deviation of one measuring instrument from another
Legal Compliance	Legal requirements	<u>All</u> maintenance activities, including those mentioned above, that are based on legal requirements

Table 5 Maintenance Activities with Explanations

Execution interval English	Maintenance Interval (German)	Explanation
Periodically Optional: Automatically defer after expiration Optional: Maximum Deferral Period	Periodically Optional: Automatically defer after expiration Optional: Maximum Deferral Interval	Execution after a fixed period (min. one month, max. 10 years), starting either with the previous maintenance activity or the first use after the maintenance activity If no further use is scheduled, the maintenance activity is automatically postponed until the device is scheduled for use again in the MFP Time limit for the deferral interval
Pre-deployment	Before device deployment	Maintenance activity must be performed before deployment; if necessary, a minimum lead time for completion before deployment be specified, e.g.,

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Post-deployment	After equipment deployment	account for long transport times Maintenance must be performed promptly after the device is deployed
-----------------	----------------------------	---

Table 6: Maintenance intervals with explanations

Maintenance intervals can also be combined, e.g., visual inspection of large equipment before and after each use.

Maintenance planning and processing in the MFP takes place in four steps:

1. Entry of a maintenance routine Required fields
2. Enter additional information for the maintenance routine
3. Manually postpone a maintenance task or record its execution
4. Maintenance overviews and reports

1. Entering a maintenance routine: Required fields

Equipment Overview -> Select Equipment -> Maintenance Policy -> Add New Maintenance Definition

- **Type:** Select the type of maintenance activity; see Table 5 above.
 - **Name:** Exact description of the maintenance activity.
 - **Maintenance Policy:** Select the execution interval; see Table 6 above.
- > Save
- **Add first entry:** Click 'Skip' to skip this step, or enter the first maintenance activity that has already been performed here if necessary.
- > Save



If a maintenance activity is performed periodically, the cycle only starts if the first execution has been recorded in MFP.

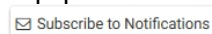
<input type="button" value="Add New Maintenance Definition"/> <input type="button" value="Add New Maintenance Entry"/>		<input type="button" value="Unsubscribe from Notifications"/>				
Type	Name	Identification nr.	Required	Last Performed	Expiry	Memo
Legal Compliance	Wartung test	-	Periodically	01.07.2019	31.08.2019	
Test	dsf	-	Post-deployment, Periodically	01.06.2019	Deferred Maintenance	
Test	awer	-	Periodically	01.03.2019	31.05.2019	

Table 7: Creating and Editing Maintenance Routines

The maintenance routine is now listed on the equipment's maintenance page.

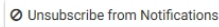
Users can subscribe to or unsubscribe from automatic email notifications regarding upcoming maintenance intervals for a piece of equipment:

Equipment Overview -> Select Equipment -> Maintenance -> Subscribe to email notifications via



* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Equipment Overview -> Select Equipment -> Maintenance -> Unsubscribe from email notifications using



2. Enter additional information for maintenance routines

Equipment Overview -> Select equipment -> Maintenance Definition: -> Edit -> Enter additional information

- **Identification Number:** Here, the user can enter a custom identification number for the maintenance routine
 - **Description:** Here, the maintenance routine can be described in more detail.
 - **Notify before expiry:** If an email notification is to be sent before the maintenance interval expires, a corresponding deadline can be specified here.
 - **Time expected to perform work:** Here, the estimated workload in hours can be entered.
- > Save

3. Manually postpone a maintenance task or record its completion

Equipment Overview -> Select Equipment -> Maintenance -> Maintenance Definition: -> Defer -> Enter deferral

- **Date:** The end date of the deferral must be specified.
- **Memo:** You can enter comments regarding the deferral here.
- -> Save

or

Equipment Overview -> Select Equipment -> Maintenance -> Add New Maintenance Entry -> Select the maintenance routine that was performed -> Record Execution

- **Date:** The execution date must be specified.
- **Expiry:** This is automatically filled in if a fixed recurrence interval is specified in the maintenance definition. If not, the expiration date must be entered manually here.
- **Duration:** The actual working time in hours can be entered here.
- **Defects:** Any defects found can be entered here.
- **Memo:** Comments regarding the maintenance task can be entered here.
- **Document:** Upload all relevant documents for the maintenance task here.
- -> Save

4. Maintenance Overviews and Reports

Maintenance overview for a piece of equipment:

Equipment Overview -> Select Equipment -> Maintenance

* The job titles, statuses, and other designations used in this regulation apply to both women and men.




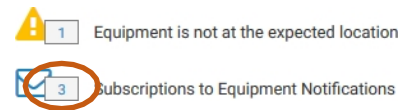
	<p>Maintenance is postponed (automatically or manually)</p>
	<p>Maintenance validity is about to expire</p>
	<p>Maintenance validity has expired</p>

Table 8 Color coding on the Equipment Maintenance page

A maintenance overview for all subscribed equipment is available on the IMS homepage:



A maintenance overview for all equipment in your own group is available on the IMS homepage:



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2.9 Repair Requests and Repair Entries (Corrective Maintenance)



In the MFP, repair requirements for a piece of equipment can be scheduled for later execution, or a completed repair can be entered directly.

Repair processing in the MFP takes place in two steps:

1. Schedule and perform repair requests
2. Directly recording repair work

1. Scheduling and performing repair requests

Scheduling repair needs:

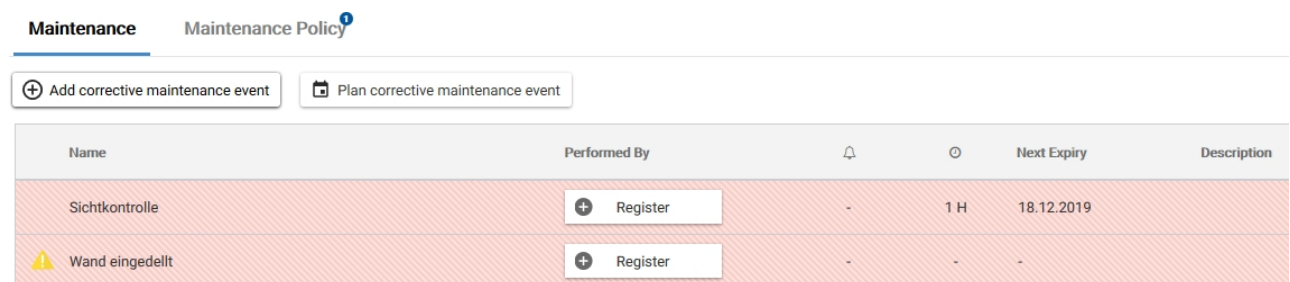
Equipment Overview -> Select equipment -> Maintenance -> Plan corrective maintenance event

- **Name:** Name the repair requirement.
- **Scheduling:** Before the next use (Next Usage) or due date (Due Date)

Optional additional information:

- **Time Expected To Perform Work (Hours):** Estimated duration of repair work in hours.
 - **Reason For Repair:** Select the cause of the repair need from design flaw, fatigue, or handling error
 - **Description:** Detailed description of the repair requirement
- > Save

The repair requirement is now displayed in red in the Maintenance Overview and is marked with a yellow "⚠️" warning symbol.



Name	Performed By	🔔	🕒	Next Expiry	Description
Sichtkontrolle	+ Register	-	1 H	18.12.2019	
⚠️ Wand eingedellt	+ Register	-	-	-	

Figure 18 Maintenance overview with repair requirement

Record repair work:

Equipment Overview -> Select Equipment -> Maintenance -> Register

Date: Enter the date the repair was performed

Duration: Required work time in hours

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Optional additional information:

Notes: Notes regarding the repair

Document Upload: Upload documents related to the repair

-> Save

2. Register repair work directly

When repair work is entered directly, the current date is saved as the execution date.

Equipment Overview -> Select Equipment -> Maintenance -> Add corrective maintenance event

- **Name:** Name the repair
- **Duration:** Required work time in hours

Optional additional information:

- **Reason For Repair:** Select the cause of the repair need from design flaw, fatigue, or handling error
 - **Notes:** Notes regarding the repair
 - **Document Upload:** Upload documents related to the repair
- > Save

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2.10 Entry of Consumables



Master data records for consumables are necessary to create complete packing lists that comply with customs regulations. If inventory management is not required for a consumable, it can be entered in the MFP as a Consumable with **the type "Consumable."** A simplified information window is provided for this purpose. It

no barcode, and location tracking is not possible in the system.

Entering a consumable is a two-step process:

1. Creating the entry with the consumable's basic data
2. Completing the entry with extended master data

1. Create the entry with the consumable's basic data

Consumable Overview -> New -> Fill in required fields

- **Name:** A generally understandable description of the consumable in German.
- **Group:** The user's research group is preset here and can be adjusted if necessary.
- **Type Consumable:** Consumable without inventory management, which is relevant exclusively for generating complete packing lists.
- **Type Multiple:** Consumable for which inventory is tracked; see the following section.
- **Unit:** Physical unit in which the material is measured; options are piece, liter, meter, kilogram.

-> Save

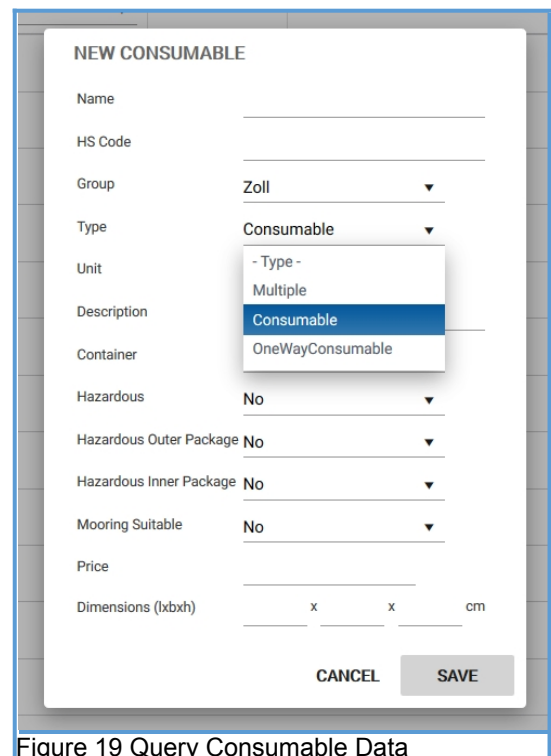


Figure 19 Query Consumable Data

Consumable entries of the Consumable type are marked with a yellow asterisk



2. Complete the entry with extended master data

Consumables Overview -> Select Consumable entry -> Edit -> Add master data

- **Description:** Additional description of the consumable in German.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

- **Container:** The default here is 'No'. If the consumable can be used as packaging, change the selection to 'Yes'. This gives the consumable the property of a packaging unit on bill of materials, to which other devices and items can be assigned.
 - **Hazardous, Hazardous Outer Package, Hazardous Inner Package:** The default setting here is 'No'. If the consumable is a hazardous material, change the selection to 'Yes'. You can then access the hazardous material data already stored in the device database's master data.
 - **Mooring Suitable:** The data that can be entered here is used for the Mooring Configurator. This module is currently unavailable, so entering data is not useful at this time.
 - **Price:** Purchase price including taxes.
 - **Dimensions:** Enter the length, width, and height of the consumable in centimeters.
- > Save

In addition to the Properties page, there is the Customs page. This page contains information on customs and export controls and is edited exclusively by the responsible department.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2.11 Entry of General Cargo Consumables (Multiple)



For consumables where **inventory levels and storage locations** are **of interest**, there is the Consumables entry with **the Multiple type**. This may be relevant, for example, for consumables with a longer lead time and/or a high unit price.

Both purchases and disposals/withdrawals of supplies are recorded, and the inventory of supplies is managed in the database. Consumables are not assigned a barcode in the MFP.

Entering and managing a multiple item involves four steps:

1. Creating the entry with the basic data for the general merchandise consumable
2. Completing the entry with extended master data
3. Registering a purchase (stock receipt)
4. Enter the deduction from inventory

1. Create the entry with the basic data for the general merchandise consumable

Consumable Overview -> New -> Fill in required fields

- **Name:** Commonly understood description of the general-purpose consumable in German.
 - **Group:** The user's research group is preset here and can be adjusted if necessary.
 - **Type Multiple:** Unit-of-count consumable for which inventory is tracked.
 - **Type Consumable:** Consumable material without inventory management, which is relevant exclusively for creating complete packing lists; see the previous chapter.
 - **Unit:** Physical unit in which the material is measured; options include piece, liter, meter, and kilogram.
- > Save

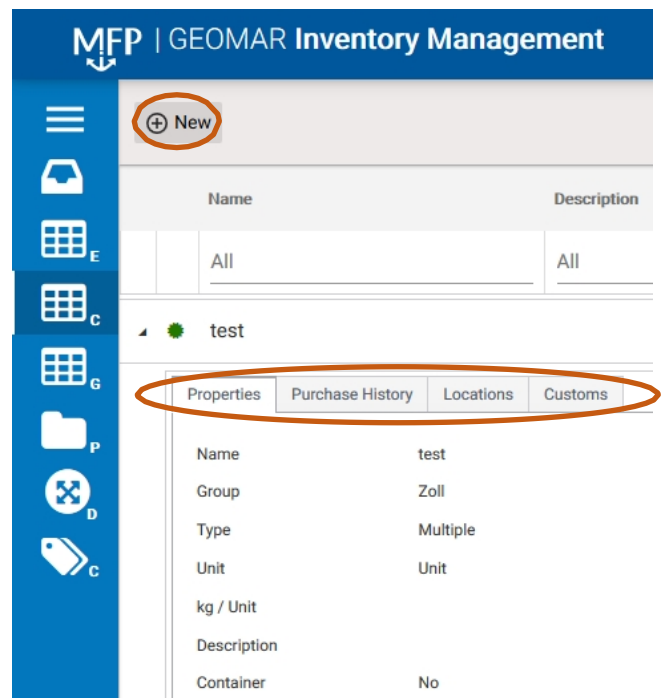



Figure 20 Create Multiple Entry

After saving, in addition to the Properties page for the basic data, the following pages appear 'Register Purchase', 'Locations', and 'Customs' appear, see Figure 20.

Consumable entries of the Multiple type are marked in the overview with a green asterisk . A newly created multiple entry has a stock level of 0 pieces.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2. Completing the entry with extended master data

Consumables Overview -> Select consumable entry -> Edit -> Add master data

- **Container:** The default setting here is 'No'. If the consumable can be used as packaging, change the selection to 'Yes'. This gives the consumable the property of a packaging unit on bill of materials, to which other devices and items can be assigned.
 - **Hazardous, Hazardous Outer Package, Hazardous Inner Package:** The default setting here is 'No'. If the consumable is a hazardous material, change the selection to 'Yes'. You can then access the hazardous material data already stored in the base data of the device database.
 - **Mooring Suitable:** The data that can be entered here is used for the Mooring Configurator. This module is currently unavailable, so entering data is not useful at this time.
 - **Price:** Purchase price including taxes.
 - **Dimensions:** Enter the length, width, and height of the consumable in centimeters.
- > Save

In addition to the Properties page, there is the Customs page. This page contains information on customs and export controls and is edited exclusively by the responsible department.



If the stock level of a multiple is 0 units, the entry can be used in schedules for transports and outbound shipments without a warning message. A conflict only arises in the MFP when loading a transport, and loading cannot be performed without stock. Stock management is handled as described in the following two sections.

3. Register a Purchase (Stock Receipt)

Consumables Overview -> Select Consumable Entry -> Purchase History -> Register Purchase -> Register Purchase (Stock Receipt)

Required fields

- **Quantity:** Purchase quantity in units.
- **Location:** Storage location for the entire purchase quantity. If the purchase quantity is to be distributed across multiple storage locations, either register the purchase in multiple individual entries or register the total quantity and subsequently change the storage location for individual items in Tracking.
- **Net total purchase price:** Enter the total purchase price for all items excluding taxes.
- **Customs Price:** Enter the total purchase price for all items, including taxes.
- **Purchase Date:** The current date is automatically used as the purchase date, but this can be adjusted if necessary.
- **Customs Type:** Select "Free" from the dropdown menu here.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Optional Additional Information:

- **Order Number:** Enter the supplier order number here.
 - **Requisition number:** Enter the internal order number here.
 - **Supplier:** The supplier or distributor can be entered here.
 - **Manufacturer:** Enter the manufacturer here. If self-manufactured, enter the institution here.
- > Save

The purchase is now displayed in the "Purchase History." Storage locations with their respective quantities are listed on the Locations page.

4. Record a deduction (stock out)

Inventory movements for multiple consumables are automatically recorded in the MFP when transports and dispatches are carried out correctly. A deduction from the total inventory, as described below, is required when parts are consumed (e.g., base weights), lost, or broken.

Consumables Overview -> Select Consumable Entry -> Purchase History -> Register Deducted/Lost -> Deduct from Inventory

- **Type:** Select the type of deduction: Deducted - used, Lost - lost, Broken - broken, Worn-Out - worn out.
 - **Quantity:** Specify the quantity of deductions in units.
 - **Customs Type:** Select "Free" from the dropdown menu.
 - **Consumable – location:** Storage location from which the deduction is to be made.
 - **Date:** The current date is automatically used as the deduction date, but this can be adjusted if necessary.
 - **Reason:** Optionally enter a reason.
- > Save

The deduction is now displayed in the 'Purchase History'.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2.12 Hazardous Materials



Data for common hazardous materials is already stored in the base data of the equipment database; additional entries can be created by administrators as needed.

These entries can be assigned directly to a plan list as a standalone material or used as part of an equipment entry (Equipment & Consumables).

To view the existing hazardous materials entries, open the "GroundData" section. If the required entry is not available here, it can be created by an administrator.

In the query window for the basic data (details) for equipment entries, there is a field labeled 'Hazardous Characteristics'. Here, the hazardous material to be assigned to the device is selected from a drop-down list.

In the query window for basic data for consumable entries, there is the 'Hazardous' selection field. If 'Yes' is selected, a drop-down list opens from which the hazardous material is selected.



Figure 21 Overview of Hazardous Materials

For Generic Equipment, no hazardous material information can be specified within the template. This information must be entered individually in the equipment entries as described above.

To assign hazardous materials as standalone items directly to a plan list, open the corresponding plan list and select the 'Hazardous Materials' tab. Select the required hazardous material on the right side and drag and drop it into the 'Content' area on the left.

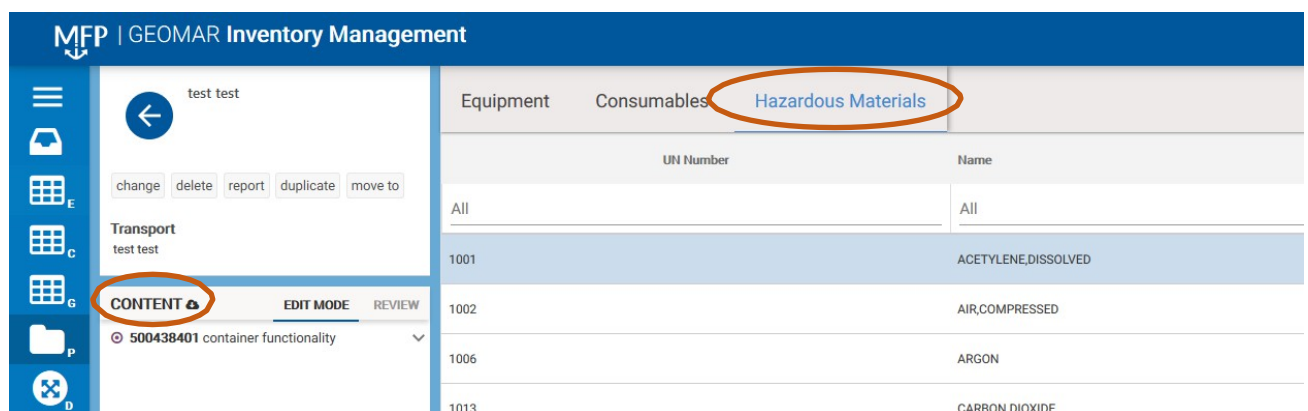


Figure 22 Hazardous Materials in the 'PlanList' Area

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3. Planning and Execution of Movements



Equipment movements and deployments are represented in the Marine Facilities program via **Voyages**, **Transports**, and **Deployments**. Here, location and time periods are defined, and individual movement operations can be linked together. This allows even complex logistics processes to be mapped.

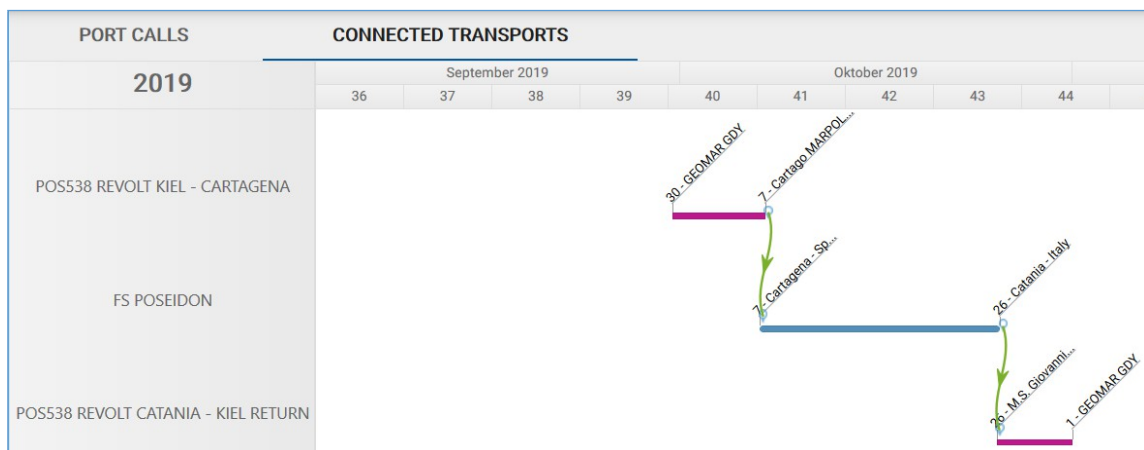


Figure 23 Gantt chart for a voyage with round-trip transport

Plan lists compile all equipment, consumables, and hazardous materials intended for a specific use. Only by assigning the plan list to the corresponding transport, a voyage, or a deployment is the plan list's content reserved for the specified location and time period. If an attempt is made to schedule the equipment item for another use during the period in question, the MFP issues a warning message. All equipment movements and plan lists are automatically created as plans. The "Load," "Register Departure," "Register Arrival," and "Unload" functions are used to convert the plan into actual implementation within the Marine Facilities Program. The current location is automatically updated in the program. The corresponding movement history of the equipment items can be accessed at any time.

To ensure clarity in the area of movement operations for all users, the naming conventions in the table below should be applied for Voyages, Transports, Deployments, and Plan Lists.

1. Purpose	1.1 Optional additional identification details	2. Location
<ul style="list-style-type: none"> - Departure code - Project name - Maintenance + Company - Marine internship 	<ul style="list-style-type: none"> - Mode of transport - Research group code - Content - ... 	<ul style="list-style-type: none"> - Departure point Destination - Station number - ...

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

- Transit		
- ...		

Table 9 Naming conventions for voyages, transports, deployments, and plan lists

“M-155 Sidescan Kiel – Point-à-Pitre,” “Repair Sonardyne Kiel – Yately,” and “GeoSEA A308” are examples of names that follow the naming conventions. Voyages on FS Alkor are imported from the MFP project management module and do not need to be created by the user.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.1 Best practices for logistics related to a cruise



Equipment items are only reserved for the period during which they are assigned to a specific movement via a schedule list. Therefore, the entire logistics chain—including outbound transport, the cruise itself if applicable, or e.g., repair duration at the manufacturer and return transport with estimated duration, must be created well in advance to achieve good planning accuracy in MFP. All dates and port calls can be changed in the program at a later time to offer the greatest possible flexibility.

Recommended procedure for a voyage:

Chronological workflow	What happens automatically in MFP?
Create a trip	
Create outbound transport and link it to the trip <ul style="list-style-type: none"> • Create a separate shipment in the MFP 	
Outbound transport -> Create a new planlist to create an assigned planlist <ul style="list-style-type: none"> • Create a separate planlist for each area of responsibility (e.g., AUV, GDY, MUHS) • A planlist contains all packages (including multiple containers, if applicable) for a area of responsibility 	The planlist is automatically linked to the transport; the availability filter for the planlist's selection range is automatically set to the transport's data. Equipment items in the content area of the planlist are thereby automatically reserved for the outbound transport and the outbound trip.
If applicable, return shipment automatically via For the outbound transport, create "other actions" -> "return transport" here and link it to the outbound run	
Create a plan list for return transport that is similar in content to the outbound transport: duplicate (with usage "Link to" -> Transport)	All parts on the original plan list are transferred to the duplicated plan list and reserved for the duration of the return transport
Plan list for return , if there are significant differences from outbound transport: select return transport Select -> Create plan list	The availability filter for the plan list selection range is automatically set to the data of the return transport and the research vessel as the storage location

Table 10 Recommended procedure for a voyage

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

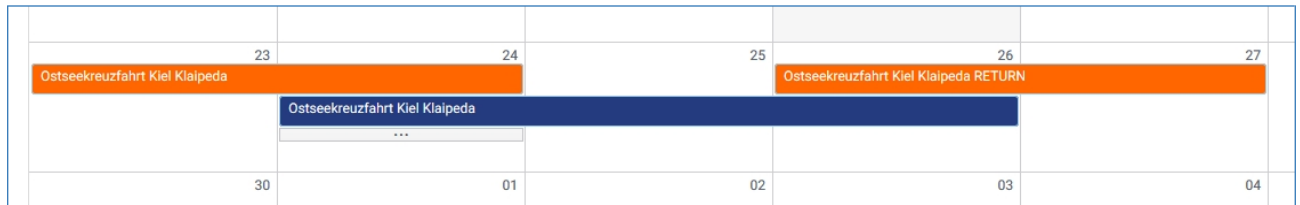


Figure 24 Visualization of the logistics process for a voyage

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.2 Create Voyage (IMS-Group Admin and IMS & Cruise)








A voyage is a movement process to which, in addition to the start and destination locations and times, a wide range of other information can be assigned in the MFP. Multiple voyage segments and scientific activities can be mapped.

Creating and editing a voyage is a two-step process:

1. Create Voyage: Required Fields
2. Enter additional voyage information and attach documents

1. Create Voyage Required Fields


Voyages and Transports -> New -> Voyage -> General Information: Fill in required fields

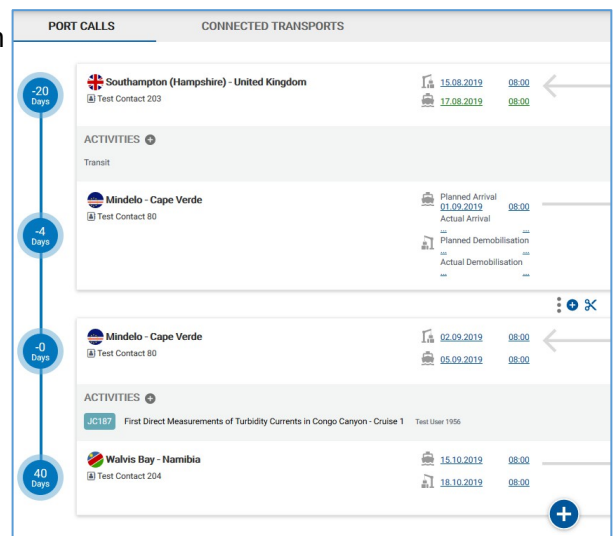
- **Name:** Exact description consisting of purpose and location; for details, see the naming rules in the introductory chapter 3. Planning and execution of movements
- **Ship:** Select the ship on which the voyage takes place
- **Handling:** The default setting is 'Internal'; do not change it.
- **Contact Person:** Your own user is preset here; can be adjusted if necessary.
- >  Save Voyage
- **Port of Departure:**  Click to select the port of departure Select port of departure
- **Planned departure time:**  Select departure time
- **Port of Arrival:**  Click to select the port of arrival Select destination port; if multiple ports are visited, select the first destination port
- **Planned arrival time:**  Select arrival time

Once this information is complete, the program automatically saves it and creates the entry for the voyage.

The "Port Calls" view displays the voyage itinerary with port calls.

A countdown for each departure time and arrival time of each leg of the voyage. In the "Connected Transports" view, the voyage and all associated transports are displayed in a Gantt chart.






In the Voyages and Transports overview, each voyage is marked with a  black anchor. A newly created voyage is automatically displayed in the overview with the status 'Planning'.



* The job titles, statuses, and other designations used in this regulation apply to both women and men.

2. Enter *additional information for the voyage* and attach documents

Voyages and Transports -> Select voyage for editing -> Edit -> Enter additional information

- **Planned Mobilization**  ... : Planned start of mobilization.
 - **Planned Demobilisation**  ... : Planned end of demobilisation.
 -  ... : The port agent can be specified using the profile icon below the respective port.
 - **Activities**: The planned research activities of individual scientists and deployments can be listed here. Unless further details are provided here, the program classifies the voyage segment as 'Transit'. This has no effect on the logistical processes depicted in the MFP or the reports provided for them.
 -  : Clicking the white cross on a blue background creates a new voyage segment with its own port of departure and port of destination. As soon as the port details and the start and end times are complete, the new voyage segment is automatically saved.
 -  : This allows individual voyage segments to be removed.
 - **Documents Upload**: Select file – Select the document to be uploaded for the voyage -> optionally rename the Document Title
- > Save

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.3 Link and execute voyage (IMS-Group Admin and IMS & Cruise)




To map the complex logistical planning associated with a voyage, it is linked in MFP to planning lists and the associated transports. A Gantt chart is available to visually represent the complex processes

. The implementation of the entire process is then recorded in MFP. This is done in two steps:

1. Create links and retrieve reports
2. Load and unload the trip and record execution dates

1. Create links and retrieve reports


Link a plan list to a voyage/create one for a voyage:


Voyages and Transports ->  Select the voyage to be linked to a plan list -> **next to the port of departure**

EQ [Equipment: 0 / 0](#) -> Add Planlist -> select an existing planlist or create a new one for the voyage -> select a mobilization variant (for details, see 3.6 Create Planlist and Edit Master Data) -> Save

All planlists linked to a trip are listed in the trip's Equipment window. The respective planlist name also serves as a link to open the planlist for further editing.









Equipment

CUSTOMS REPORTS 

[Customs Report - Based on Planning](#)
[Customs Report - Based on Tracking](#)
[Pack List](#)
[Loading Plan](#)
 Load more 

Planned: 71
 Actual: 0
 Hazardous Substance: No

PLANLISTS

		Content		
	Ausrüstung FB 1  Test User 1933	0/0  0/0		
	Ausrüstung FB 2  Test User 1619	0/20  0/51		


Equipment items from the plan list are already scheduled elsewhere:

If the plan list contains equipment items that are already scheduled elsewhere for the trip's duration, a yellow warning message appears. The link cannot be saved. Only when the already scheduled equipment items have been removed from the schedule list, or the schedule has been adjusted so that they are available for the trip after all, can the link be saved.

800194102 6D6 K/MT 4240 was already planned: JC-187
800195202 6D6 K/MT 4240 was already planned: JC-187


equipment

Link an outbound transport to the voyage:

Voyages and Transports ->  Select transport to link->Edit -> Linked Voyages and Transports -> **Destination – Link** to-> Select Voyage/Cruise -> Save

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Link a return transport to the voyage:

Voyages and Transports ->  Select transport to link->Edit -> Linked Voyages and Transports -> **Pick up items from – Link to-> Select voyage/cruise -> Save**

In the "Connected Transports" view, the outbound trip is displayed with all linked transports in a Gantt chart. Each bar here also serves as a link to open the respective movement transaction for further processing.

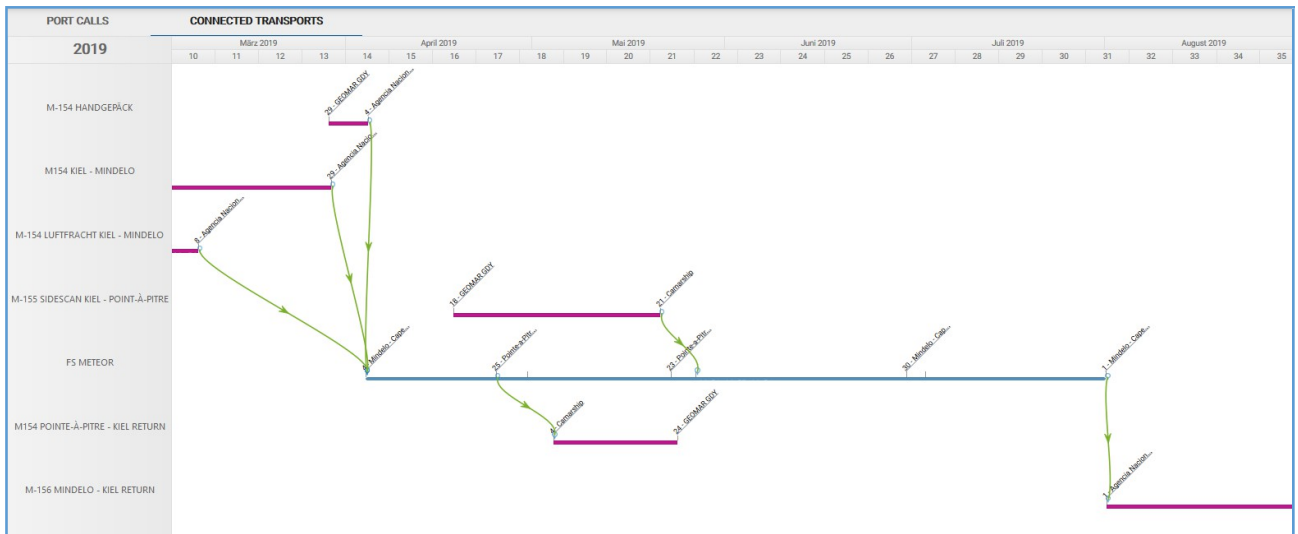



Figure 28 Voyage with multiple linked transports

Retrieve packing lists, customs lists, and other parts lists for the voyage:

Voyages and Transports -> Select “” Voyage -> “EQ Equipment: 0 / 0” -> Select report format -> OK -> Report is generated as an Excel spreadsheet

Report name	Report content
Custom Report	Customs report with data, specifically for German customs clearance
Export Control Report	Export Control Report with data for the internal export control review
Third-Party Report	Report containing data, specifically for agents and customs authorities in third country
Pack List	Packing lists containing comprehensive data on all goods on the manifest; can be customized by user, to meet requirements
Loading Plan	Loading plan with storage location and weight of packages

Table 11 Report types and their content for outbound shipments



2. Load and unload the shipment and record execution dates

The voyage is now transferred from planning to execution by recording the loading. The actual departure time is then entered. The status of the voyage



* The job titles, statuses, and other designations used in this regulation apply to both women and men.

changes from 'Planning' to 'Active,' and the location for the deployed equipment becomes the ship. Schedule lists linked to the trip are archived; they remain viewable but can no longer be modified.

Optional: Validate plan list content:

Voyages and Transports ->  Select voyage -> **next to the port of departure**, select " [Equipment: 0 / 0](#)" -> Validate -> Validation list with red markers for discrepancies regarding container equipment



Load outbound shipment:

Voyages and Transports ->  Select voyage -> Select " [Equipment: 0 / 0](#) " **next to the port of departure** -> Load -> Tracking view To load, **entries are selected on the right and dragged to the left** via drag-and-drop; the following four loading options are available:

Loading option	Function
All (flat)	All items on all packing lists associated with the shipment are displayed, regardless of the packing structure; items can only be loaded individually
All (hierarchy)	All items on all plan lists belonging to the shipment are displayed in the packing unit structure; items or packing units can be loaded individually here
Other plan lists	All plan lists associated with the shipment that were created by other MFP users are displayed; each plan list is loaded in its entirety at once, and a prompt appears asking from which storage locations the multiples on the plan list should be loaded
Own planlists	All plan lists belonging to the transport that you have created yourself are displayed; each plan list is loaded in its entirety in one go, and a query is made as to which storage locations the multiples on the plan list should be loaded from

Table 12 Tracking View (Loading/Unloading) Options for Transports and Voyages

Enter actual departure time:

Voyages and Transports ->  Select Voyage ->  Actual Departure ... -> A: Specify departure time -> Save

Enter actual arrival time:

Voyages and Transports ->  Select Voyage ->  Actual Arrival ... -> A: Enter arrival time -> Save

Once the actual arrival time has been entered, the status of the trip changes to 'Finished'.

Unload voyage:

Voyages and Transports ->  Select voyage -> **next to the destination port**  [Equipment: 0 / 0](#) -> Unload -> Tracking view To load, **select entries on the left and drag**

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

and Drop to the respective new storage locations; for this, there are the four unloading options described in Table 12.

The planning lists associated with the voyage are automatically archived and can no longer be modified ('content is read-only').

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.4 Create Transport (IMS-Group Admin and IMS & Cruise)



A simple movement from A to B is represented in the system by a transport. The transport can be linked to an outbound shipment or to another transport/return transport. The process in MFP consists of two stages: planning,

as described in this chapter, and Execution, as described in the following chapter. **Creating a transport and entering the planning data can only be performed by users with the IMS-Group Admin or IMS & Cruise authorization.** The subsequent execution of the transport in MFP is carried out by the MFP user who was designated as the contact person for the respective transport during the transport creation process.


Creating and editing a transport involves two steps:

1. Create Transport: Required Fields
2. Enter additional transport information and attach documents
3. Create transport links

1. Create Transport Required Fields

Voyages and Transports -> New -> Transport -> General Information Fill in required fields Alternatively

Home -> New Transport -> General Information Fill in required fields

- **Name:** Exact description consisting of purpose and location; for details, see the naming rules in the introductory chapter 3.
Planning and Execution of Movements
 - **Handling:** 'External' is the default setting; do not change this setting.
 - **Contact Person:** Your own user is preset here; this can be adjusted if necessary. When selecting the contact person, note that only this person can register the loading and start of the transport in the MFP.
 - **Expected Pick Up:** Enter the expected pickup time
 - **Departure address:** The address of your own group at the institute is preset here and can be changed if necessary.
 - **ETA:** Enter the estimated time of arrival at the destination
 - **Destination address:** Select destination
- >  Save Transport

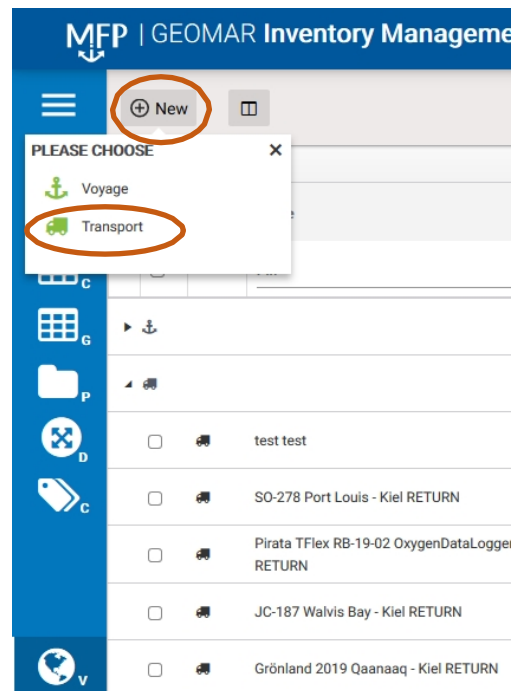



Figure 29 Create Transport

* The job titles, statuses, and other designations used in this regulation apply to both women and men.


The program automatically generates a barcode for the transport. After creation, the transport has the status "Planning." Transports are marked with a black truck  in the overview.

2. Enter additional information

Voyages and Transports ->  Select Transport -> Edit -> Enter additional information


- **Courier:** Select courier service provider.
- **Shipping:** Select shipping method.
- **Purpose:** Specify the purpose of the transport.
- **Tracking Code:** Enter the courier service provider's tracking code.
- **Notes:** Space for notes.
- **Entry Processing Unit:** Do not enter anything here.
- **Responsible Agent:** Enter the responsible agent.

Attach document:


Voyages and Transports -> Select a transport under "" -> Documents -> "Browse Files" or "Upload"
-> Select the document to be uploaded for the trip -> Open (-> Save)

3. Create transport links

Create follow-up action for return transport:

Voyages and Transports ->  Select transport -> Other actions -> Follow-up actions Select 'Yes' for return transport -> Save

Link to an existing transport or outbound shipment:

Voyages and Transports ->  Select transport -> Edit -> Select 'Linked Voyages and Transports'

- **Pick Up Items From:** Transfer cargo from a trip or a previous transport
 - **Destination:** Deliver cargo to a trip or a subsequent transport
- > Save

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.5 Link and execute transport (IMS User as Contact Person)




Equipment, hazardous materials, and consumables can be assigned to a transport via one or more planning lists. For the goods to be transported, standardized reports can be retrieved that meet the requirements of, for example, customs or an agent. Parallel to the actual processing of the transport, its execution is recorded in the MFP. All of the steps mentioned are carried out in the MFP by the contact person assigned to the transport.

1. Link to Plan List
2. Retrieve reports
3. Load and unload the transport and record execution dates


1. Link to Planlist and retrieve reports

Create a new Planlist for the transport:

Voyages and Transports ->  Select Transport -> Create New Planlist

For all planlists created via the transport, the name of the transport is automatically used as the name. The start and end dates are automatically entered in the Availability Filter.

Link to an existing planlist:

Voyages and Transports ->  Select Transport -> Add Existing Planlist -> Select Planlist
-> Save

The system automatically checks whether the equipment items on the plan list are available for the duration of the transport. If an equipment item is already scheduled, the program displays an error message. **Assigning an existing plan list to a transport is not possible until all scheduling conflicts have been resolved.** This can be done either by removing the equipment items that are already scheduled elsewhere from the plan list for the transport, or by adjusting the schedule for these individual equipment items so that they are available for the transport.

The assignment of planning lists to a transport cannot be undone in the transport view. To remove a planning list from a transport, you must first open the relevant planning list. For further details, see Chapter 3.6 Create Planning List.

2. Retrieve Reports

Retrieve packing lists, customs lists, and other parts lists based on the planning status for the transport:

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Voyages and Transports -> Select the transport for which reports are to be retrieved -> Reports -> Report '... - Based on Planning' -> Create Report -> Report is created as a PDF or Excel spreadsheet

Report Name	Report content	File format
Shipping Labels	Shipping labels with barcodes for each package	PDF
Custom Report	Customs report with data, specifically for German customs clearance	XLS
Export Control Report	Export control report with data for internal export control checks	XLS
Third Party Report	Report with data specifically for agents and customs authorities in the third country	XLS
Pack List	Pack lists containing comprehensive data on all goods on the manifest; can be customized by the user to meet specific requirements	XLS
Loading Plan	Loading plan with storage location and weight of the packages	XLS

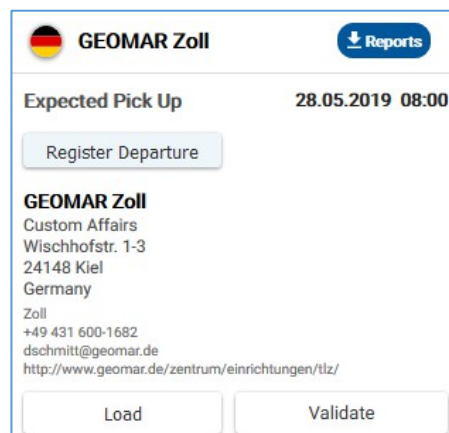
Table 13 Report Types and Their Content for Transports

3. Load, unload, and record execution dates for transports

On the planned start date of the transport, MFP automatically sends a one-time reminder email to the designated contact person, instructing them to load the transport and register the departure. Within the program, there is no time limit within which a transport must begin after the planned start date. However, the status of a transport that has not begun three months after the planned start date is automatically set from 'Planning' to 'Out-of-date'.

The transport is transferred from planning to execution by loading it. The actual departure time is then recorded. The transport's status changes from 'Planning' to 'Active,' and the transport becomes the location for the deployed equipment.

Plan lists linked to the transport are archived; they remain viewable but can no longer be modified. Afterward, the arrival time is recorded and the transport is unloaded. The steps for executing the transport must be performed in the chronological order described below. If this order is deviated from, the program displays an error message.



Optional: Validate plan list contents:

During validation, the system checks whether the parts assigned to a container unit are actually located there as expected. If assigned parts have a different current storage location than the container unit in the MFP, a warning message appears during validation, and you have the option to move the part to the container unit.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Voyages and Transports -> Select a "🚢" transport -> Validate -> The validation list is displayed, with red markers for discrepancies regarding container equipment if applicable

Load transport:

Voyages and Transports -> Select Transport under "🚢" -> Load -> Tracking view To load, **select entries on the right and drag them to the left** using drag-and-drop; the following four loading options are available:

Loading option	Function
All (flat)	All items on all packing lists associated with the transport are displayed, regardless of the packing structure; items can only be loaded individually
All (hierarchy)	All items on all plan lists belonging to the shipment are displayed in the packing unit structure; items or packing units can be loaded individually here
Other plan lists	All plan lists associated with the shipment that were created by other MFP users are displayed; each plan list is loaded in its entirety at once, and a prompt appears asking from which storage locations the multiples on the plan list should be loaded
Own planlists	All plan lists belonging to the transport that you have created yourself are displayed; each plan list is loaded in its entirety in one go, and a query is made as to which storage locations the multiples on the plan list should be loaded from

Table 14 Tracking View (Loading/Unloading) Options for Transports and Voyages

Record actual departure time:

Voyages and Transports -> Select a transport under "🚢" -> Register Departure -> Enter departure time -> Save

Record actual arrival time:

Voyages and Transports -> Select "🚢" Transport -> Arrival tab -> Enter arrival time -> Save

Once the actual arrival time has been entered, the parts are automatically unloaded and the transport status changes to 'Finished'. The storage location of the equipment parts is now the destination of the transport. If this is a transport to a destination for a trip, the ship becomes the new storage location.

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3.6 Create a plan list and edit master data



A plan list compiles all equipment, consumables, and hazardous materials intended for a transport, a mission, or a deployment. If there are multiple outbound/return transports for a mission, e.g., containers and air freight, a separate plan list is created for each transport operation. A plan list

can also be created independently and is only later assigned to a specific equipment movement (transport, trip, deployment).

If individual packages of a transport or an outing are handled by different responsible parties at the institute—e.g., outbound and return transport for an outing involving multiple research areas—a packing list must be created for each area of responsibility. These can still be assigned to the same transport or the same outing. If there is a person responsible for the contents of a larger shipment involving multiple containers, this can be represented with a packing list.

For equipment parts and consumables that are frequently shipped in the same configuration, a packing list template can be created.

Creating and editing a packing list is a two-step process:

1. Create a plan list for a voyage or transport
2. Create a plan list without a movement transaction (also for deployment)
3. Create a plan list template
4. Edit plan list master data


1. Create a plan list for a voyage or transport

If the transport or voyage to which the plan list belongs already exists in the MFP, it makes sense to create the plan list via the transport or voyage. All basic data will then be entered automatically.

The equipment items added to the plan list are reserved for the duration of the transport and cannot be scheduled by other users. For voyages, there are three different mobilization options that define the reservation of equipment items:

1. Mobilise and Demobilise on the same Voyage: The equipment item is mobilized for the voyage and demobilized again at the end of it. The equipment item is thus reserved for the duration of the voyage.
2. Mobilise only: The equipment item is mobilized for the voyage and then remains on the ship. The equipment item is thus reserved for an indefinite period starting from the beginning of the voyage.
3. Demobilise only: Equipment items that remained on a ship from a previous voyage can be demobilised in this way. The reservation from a previous voyage lasts until the end of the voyage linked here.

Voyages and Transports -> Select the transport for which the plan list is being created ->

 Create a new Planlist

or


* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Voyages and Transports -> Select the voyage for which the plan list is being created -> EQ [Equipment: 0 / 0](#) ->

+ Add Planlist

-> Create New -> Enter plan list name -> Save

- **Name:** Taken from the transport. Must be entered manually under 'Create New' . , here the exact name consisting of intended use & location; for details, see the naming rules in the introductory chapter 3. Planning and execution of movements.
 - **May be edited by:** The user's own account is preset; if necessary, expand to the user's own group or all MFP users.
 - **Type:** Normal Planlist is preset.
 - **Usage:** Taken over by Transport/Voyage.
- > Save

PlanList entries of the type "Normal Planlist" are marked in the PlanList Overview with a light blue semicircle  .

2. Create a planlist without a movement transaction (also for deployment)


If there is not (yet) an associated movement transaction in the MFP, or if the planlist is to be assigned to a deployment, the planlist is created via the Planlist Overview.

PlanList Overview -> New

- **Name:** Exact description consisting of purpose & location; for details, see the naming rules in the introductory chapter 3. Planning and Execution of Moves
 - **May be edited by:** The current user is preset; if necessary, expand to your own group or all MFP users.
 - **Type:** Select **Normal Plan List**.
 - **Usage:** Leave blank or link to a deployment, which transfers information about location and time period to the planlist.
 - **Create This Planlist Based On A Template:** A template for creating the planlist can be selected here.
- > Save



If the plan list under "Usage" is not linked to a specific movement transaction (transport, voyage, or deployment), the equipment items will not be reserved! Only once a link is created here—if necessary, at a later time—will the equipment items be reserved for the corresponding usage period.

PlanList entries of the type "Normal Planlist" are marked in the PlanList Overview with a light blue semicircle  .


* The job titles, statuses, and other designations used in this regulation apply to both women and men.

3. Create a Planlist Template

For equipment items and consumables that are frequently shipped in the same combination, a PlanList template can be created. What makes this special is that generic equipment can also be added to the contents. Only when the template is used for a normal PlanList is the specific equipment item selected for the upcoming use.

PlanList Overview -> New

- **Name:** Exact description with intended use
 - **May be edited by:** The current user is preset; if necessary, expand to your own group or all MFP users.
 - **Type:** Select **Template**.
- > Save

PlanList entries of the "Template" type are marked in the PlanList Overview with a red semicircle  .

4. Edit PlanList Master Data

Adjust the link to the transaction and the group of users:

PlanList Overview -> Select PlanList for editing -> Change -> Adjust link to movement operation and user group -> Save

If an existing PlanList is subsequently assigned to a movement operation, the availability of the equipment items for the specific time period is automatically checked at the moment of assignment. If equipment on the list is already scheduled elsewhere, the program displays an error message. The assignment to the movement operation cannot be saved until all equipment already scheduled elsewhere has been removed from the plan list or its schedule has been adjusted so that it is available during the usage period.

Delete PlanList:

PlanList Overview -> Plan List Select Edit -> Delete -> OK

Retrieve packing list, shipping labels, or saved documents along with work history:

PlanList Overview -> PlanList to Edit -> Report -> Select report format for retrieval -> OK

Duplicate Plan List:

PlanList Overview -> PlanList Select Edit -> Duplicate -> Select name, user group and usage for new plan list -> Save

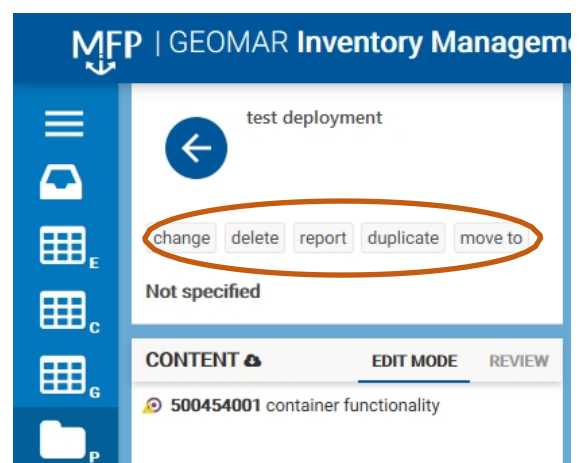


Figure 31 Edit Plan List

* The job titles, statuses, and other designations used in this regulation apply to both women and men.

Move the entire plan list content to a new storage location:

PlanList Overview -> Select plan list for editing -> Move to -> Select new storage location -> Save

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3.7 Edit Plan List Content



For export control purposes, the plan list must contain all planned equipment four to six months before the start of transport. At this point, all equipment items on the plan list that are to be taken along as spare parts

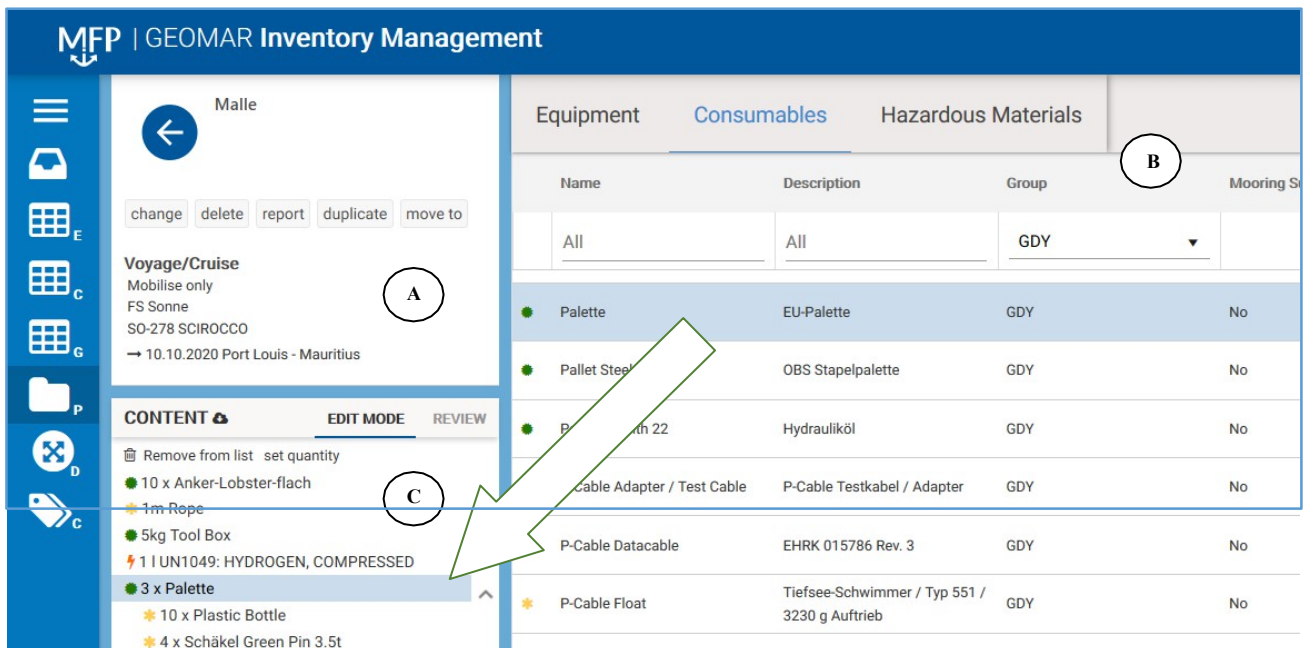
. If the exact quantity for a part is not yet known at this time, or if it is not yet clear whether a piece of equipment will actually be transported, the planning must be interpreted generously. This allows for a comprehensive export control review, and it is easily possible to remove items from the plan list later. Adding equipment items to the plan list that require subsequent approval may, in the worst case, result in these items not being permitted to be taken along. The packing list structure and consumables are not yet relevant at this stage.

In special cases, such as shipments to embargoed countries and/or the use of defense equipment, the export control procedure at the Federal Office of Economics and Export Control can take up to one year.

The contents and structure of the packages must correspond to the actual packing condition no later than 7 business days before the start of transport. Only then can correct documents for customs and agents be automatically generated by the MFP.

The Plan List view consists of three main areas:

- A) Top left: Master Data Editing (see previous section 3.6 Create
Plan List and Edit Master Data).
- B) On the right, the selection area for content, with one page each for equipment, consumables, and hazardous materials
- C) Bottom left: Plan list content



Name	Description	Group	Mooring Status
Palette	EU-Palette	GDY	No
Pallet Steel	OBS Stapelpalette	GDY	No
P-Cable Adapter / Test Cable	Hydrauliköl	GDY	No
P-Cable Datacable	P-Cable Testkabel / Adapter	GDY	No
P-Cable Float	EHRK 015786 Rev. 3	GDY	No
	Tiefsee-Schwimmer / Typ 551 / 3230 g Auftrieb	GDY	No

Figure 32: Plan list view with processing header data, selection area, and plan list content

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In an open bill of materials, individual items to be added to the bill of materials are selected in the right-hand selection pane. These are assigned to the left-hand content pane via drag-and-drop. Consumables and equipment with a container function organize the bill of materials according to the actual packaging configuration/packaging structure. Container entries in the content area are filled by dragging and dropping other entries directly onto the container entry. In the content area, container entries can be expanded by clicking “∨” to display the complete contents. Clicking “^” collapses the detailed list again.










	Equipment
	Equipment with overdue maintenance tasks
	Container Equipment
	Container equipment with overdue maintenance tasks
	Hazardous Materials
	Consumables
	Consumables classified as hazardous materials
	Consumable Type Multiple
	Consumable Type Multiple with hazardous material properties

Table 15 Legend for Plan List Entries in the Content Area and Plan List Overview

1. Add or remove consumables and hazardous materials from the plan list
2. Add or remove equipment from the plan list

1. Add or remove consumables and hazardous materials from the plan list

Consumables and hazardous materials can be added to plan lists in the MFP without limitation. The program does not manage inventory for these materials. For consumables of the Multiple type, the available quantity is managed in the MFP, but an error message regarding insufficient stock is only issued when a transport is to be loaded in the MFP. It is therefore always necessary to verify whether the scheduled material is actually available.

Add a consumable:

PlanList Overview -> Select a plan list for editing -> Consumables page -> Adjust the list filter as needed -> Select a consumable -> Drag & drop to the content area -> Enter the quantity -> The consumable is now listed in the content area




Consumables that are to serve as individual packaging units in the PlanList must also be added to the list with a quantity of ‘1’ each. The MFP creates a single packaging unit from multiple container units added to the list simultaneously; see Figure 32, Example: 3 x Pallet.

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Add hazardous material:

PlanList Overview -> Select the plan list for editing -> Hazardous Materials page -> Select a hazardous material -> Drag & drop -> Enter Amount -> The hazardous material is now listed in the content area

Removing consumables or hazardous materials:

Content area -> Select the entry to remove -> Click “  Remove from list ” -> Confirm: OK -> Consumables/hazardous materials are no longer in the content area; when removing container entries, the entire contents are also removed



Remove individual entries exclusively using ‘Remove from list’. Do not use ‘delete’, as this deletes the entire plan list from the database.

Adjusting the quantity of consumables or hazardous materials:

Content area -> Select the entry for subsequent quantity adjustment -> Click “set quantity ” -> Enter quantity -> Save

2. Add or remove equipment from the plan list

Equipment refers to items that are registered individually in the MFP and have deployment schedules and, if applicable, maintenance requirements. With proper data maintenance in the MFP, the availability and operational readiness reflected in the MFP accurately represent reality. Advanced filter functions are available in the equipment selection area; these are explained below.

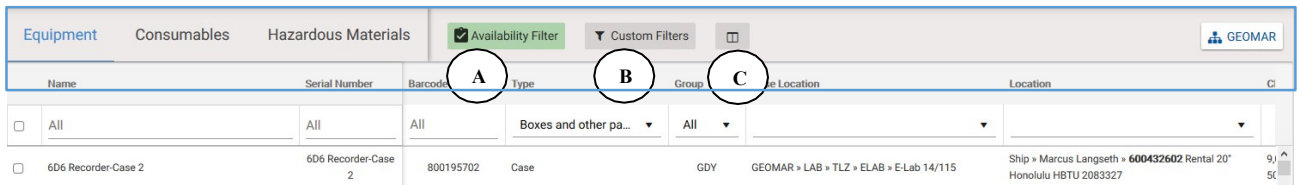


Figure 33 Plan List: Equipment Selection Filter Functions

Item	Function	Explanation
A	Availability Filter – Availability Filter	Here, the equipment selection can be narrowed down to equipment items that are available within a specific time window and have not yet been scheduled elsewhere in the MFP. If the plan list is linked to a movement transaction, this data is automatically transferred from there. The time window can also be entered manually. If data is entered in the Availability filter, it is automatically highlighted in green.
B	Custom Filters – User-defined Filter	More custom filter options, especially for upcoming and rescheduled maintenance tasks
C	Select Columns – Column selection	Here you can specify the columns to be displayed in the equipment list.

Table 16 Plan List Equipment Selection Filter Functions Explanations

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Add equipment item(s):

Container equipment with predefined contents must first be dragged into the content area so that the entire contents are automatically transferred. To automatically include the contents, confirm the "Include Equipment" prompt with "YES"; see right. If "No" is selected, a new storage location must be specified later when loading the plan list
a new storage location must be specified for the equipment items that were not placed on the plan list.

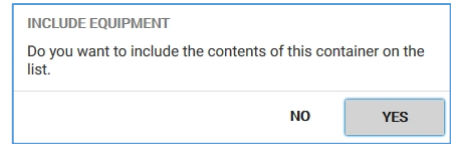


Figure 34 Container Equipment Content Transfer Prompt

PlanList Overview -> Select a plan list for editing -> Equipment page -> Adjust the list filter as needed -> Check one or more equipment items -> Drag & drop to the content area -> The equipment item(s) are now listed in the content area; they no longer appear in the selection area

Equipment that can be added to the plan list without further notes is actually available during the period in question. If maintenance is due soon or is already overdue, this is indicated by a yellow warning triangle ⚠️🔧🕒 next to the entry in the content area.

If a plan list contains parts that have not yet been checked for export control compliance, or that have already been checked as part of the export control process and classified as requiring approval, the warning message ⚠️ Export Control 🚫 appears, see the following figure. The Export Control and Customs must then be contacted by the user in a timely manner for the export control check

. If a bill of materials contains only parts that have already been reviewed and classified as not requiring a license, no warning message appears. The Export Control and Customs department must then be contacted no later than 7 business days before shipment for customs clearance.

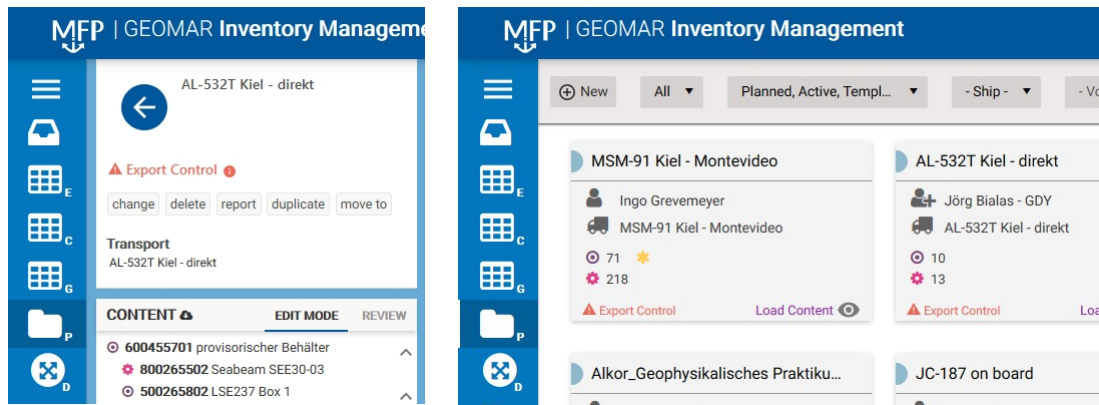


Figure 35 Export Control warning in the detailed bill of materials and in the bill of materials overview

Equipment parts that are scheduled elsewhere for the usage period:

If you attempt to drag equipment onto the content area that is already scheduled for the period in question, a warning message appears. The warning message disappears after a few seconds and the equipment remains in the selection area.

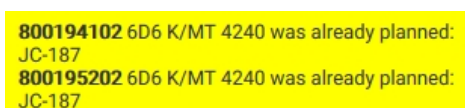


Figure 36 Warning message for scheduled Equipment

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If multiple pieces of equipment are selected simultaneously for moving to the content area and some of them are already scheduled for the period in question, none of the equipment is moved. Only after the checkmark has been removed from the already scheduled equipment can the available pieces be moved to the content area.

If a container piece of equipment, including its contents, is moved to the content area, only the part that is available is moved. Parts of the set that are already scheduled remain in the selection area after a warning message appears.



If a piece of equipment cannot be added to the plan list even though, to the best of your knowledge, it should be available during the period in question, please contact the MFP administrator. They will determine the cause of the issue within the MFP system. Please do not create your own workarounds, such as dummies for devices that cannot be accessed!

Removing individual pieces of equipment:

Content area -> Select the entry to remove -> Click “  Remove from list ” -> Confirm: OK -> The equipment item is no longer in the content area but is listed again in the right-hand selection area

When removing container equipment, the entire contents are also removed.

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Appendix A Equipment Types with the Container Attribute

Below is a list of all equipment types in the MFP that have the 'container' attribute. Other devices within the device database can be installed/inserted into these equipment types. In the plan lists, they are marked with the symbol.



AUV -> Glider -> Glider component
AUV -> Glider -> Glider vehicle
AUV -> Long Range AUV -> frame
AUV -> Long Range AUV -> hull
AUV -> Long Range AUV -> onboard electronics
AUV -> Short Range AUV -> frame
AUV -> Short Range AUV -> hull
AUV -> Short Range AUV -> Towed systems
AUV -> Towed systems -> frame
AUV -> Towed systems -> hull
AUV -> Unmanned Surface Vehicle -> USV vehicle
Boxes and other packaging -> all entries
Geophysics -> Magnetics -> Frame
Geophysics -> Seismic systems -> Frame
HOV -> HOV Vehicle
Laboratory infrastructure -> Liquid Nitrogen Generator
Mechanical handling equipment -> Lifting and loading equipment -> Container baseplates
Mechanical handling equipment -> Trolleys
Mooring systems -> Landers
Mooring systems -> Mooring hardware -> Instrument frames
ROV -> ROV frame
Samplers and profilers -> Profiling body
Samplers and profilers -> Towed body
Samplers and profilers -> Underwater multiplexer
Samplers and profilers -> Water samplers -> CTD frame
Samplers and profilers -> Water samplers -> Rosette
Samplers and profilers -> Water samplers -> UCC
Sea containers -> All entries
Video equipment -> HD towed video frame -> Frame
Video equipment -> Video drone
Winches, sheaves, and cables -> Winches -> All entries

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Appendix B Export Control

Introduction to Export Controls in the Scientific Sector by the Federal Office of Economics and Export Control

Short version in German:

https://www.bafa.de/SharedDocs/Downloads/DE/Aussenwirtschaft/afk_aca_broschuere_awareness.pdf

Manual in German:

https://www.bafa.de/SharedDocs/Downloads/DE/Aussenwirtschaft/afk_aca_broschuere_handbuch.pdf

Short version in English:

https://www.bafa.de/SharedDocs/Downloads/EN/Foreign_Trade/ec_awareness_academia.pdf

Handbook in English:

https://www.bafa.de/SharedDocs/Downloads/EN/Foreign_Trade/ec_academia.pdf