



Enterprise Mode

Centralized Sewer Network Monitoring and Job
Management via WinCan CLOUD

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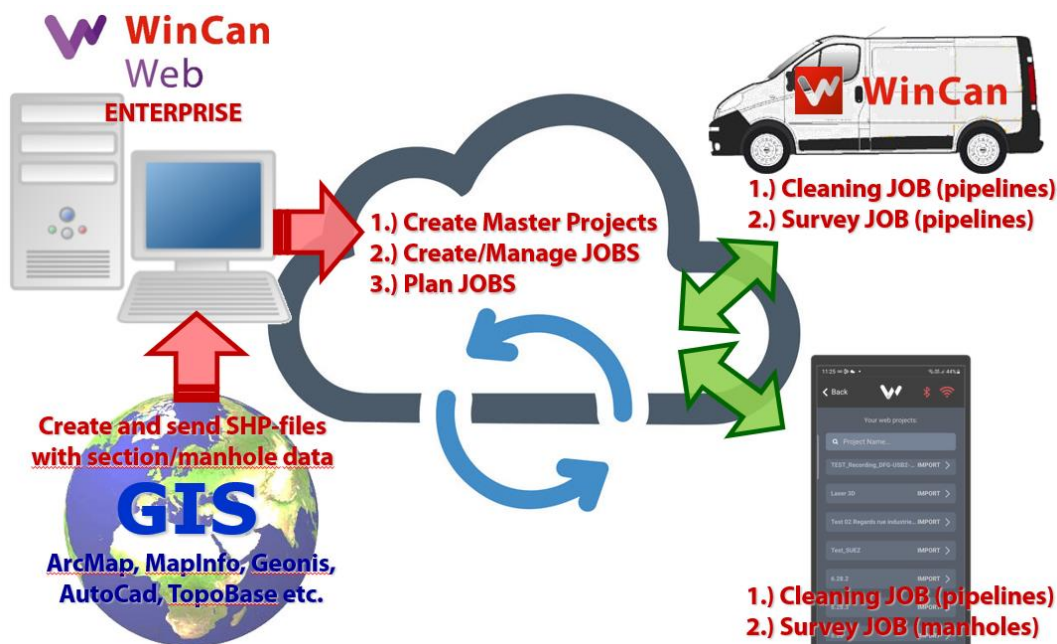
Introduction

The cloud service WinCan Web can be extended to the *Enterprise* mode. Based on geographic data, the owner of the sewer network or the TV survey company can create a master project that will be used as a **cartographic platform** for job planning and monitoring of the sewer network.

Once a master project is available the following processes must be supported:

- Create and manage cleaning, TV survey and rehabilitation jobs
- Short term planning of cleaning, TV survey and rehabilitation jobs
- Long term planning of cleaning, TV survey and rehabilitation jobs

The jobs on the other hand are sent from the CLOUD to a mobile device or to a computer in a TV-truck. Once finished they are sent back to the CLOUD and registered as COMPLETED:



This will finally allow a full control over the current status of the whole sewer network at any time.

Important note:

The term **JOB** is replaced by the term **WORK ORDER** in some countries and is transformed into a **PROJECT** that the operator can download and open with the *ManholeApp* or the *WinCan VX* software.

Project participants

The role of project participants is especially important when working with *WinCan Enterprise*. Clients managers and contractors must be aware of their responsibilities and thus know who would have to provide which kind of data. The different roles are briefly described below:

Client: this participant (e.g. cities, municipalities, private or public infrastructure operators) usually owns the sewer network and manages the sewer object data in a geographic information system (GIS). He thus must provide the data in the file format SHAPE (i.e. as SHAPE files) or allow direct access to the GIS server.

Manager: this participant (e.g. engineer office etc.) is usually responsible for the project management. He takes the data of the client, creates and manages the jobs and finally forwards them to the survey company. He thus must act as an intermediary between **Client** and **Contractor**.

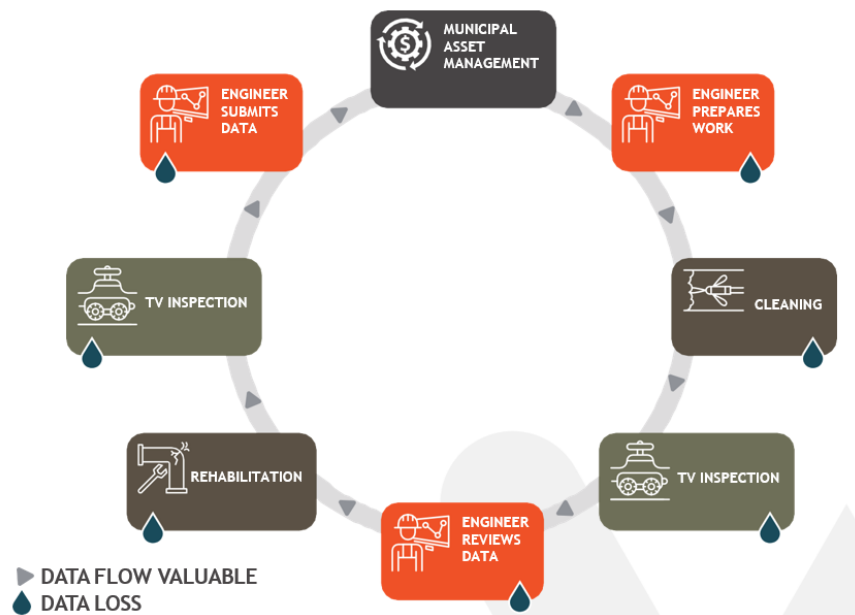
Contractor: this participant (e.g. survey company) is always responsible for the execution of the cleaning or TV survey job with the required technical equipment.

The participant **manager** may be missing in some cases, so that this role is either taken by the **client** or by the **contractor**, who must thus purchase an *Enterprise* license for WinCan Web.

The old concept

Survey data entry, administration and maintenance planning for sewer objects (i.e. sections, laterals, manholes) always implies a risk of a certain data loss due to the following reasons:

- Project data processing and administration is done on **different work stations** and data are stored **on different drives** (local hard drives, network drives, removable drives).
- **Different** inspection companies work on the same sewer object on different times.
- The client (owner of the sewer network) engages **different** managers for control and administration of the jobs to be done on **different** sewer objects.

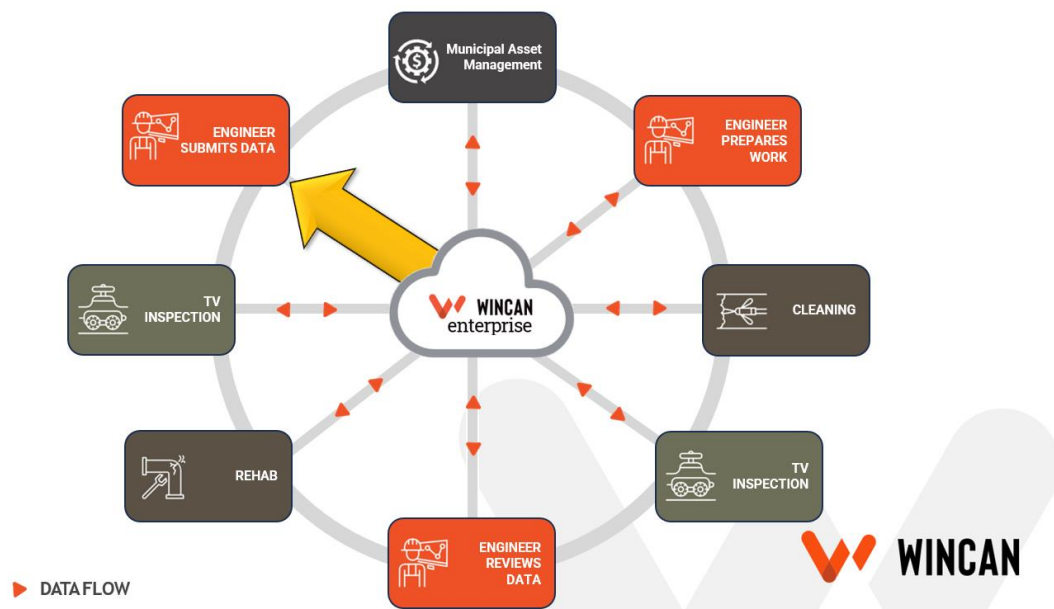


The new concept

The cloud-based solution provided by the project management platform *WinCan Enterprise* should close such information gaps, as **owners and managers can directly provide geo-referenced data of the corresponding sewer network to the inspection company**. This cartographic basis can then be used for maintenance planning (i.e. cleaning, TV survey, rehabilitation).

Each participant (client, manager, contractor) can access the updated job status of each sewer object and thus can check the current state of maintenance (i.e. cleaned, inspected, repaired) over the whole sewer network at any time.

Sending data on physical drives from different sources is no longer necessary and the risk of data loss will be reduced to a minimum.



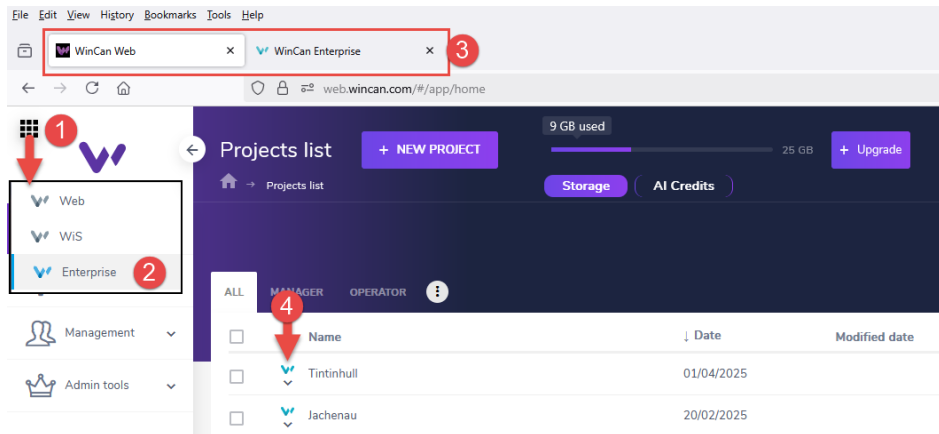
Licensing

The following licenses are needed to make full use of the *Enterprise* mode as a part of WinCan Web:

- WinCan Web: valid account with the license modes *Flex* and *Enterprise* activated
- WinCan VX: valid EXPERT license package (**slot 1523**) with *Enterprise* mode (**slot 4005**) and Service Pack 2022 activated (**slot 1512**)

Switching between Web and Enterprise mode

Customers, that paid for an *Enterprise* license but also want to continue working in the *Web* mode (normal mode) showing the classic list of projects, must be able to switch easily between both modes. Log-in to WinCan Web with your master account and hit the tile icon (1) at the top left to activate the *Enterprise* mode (2) in addition:



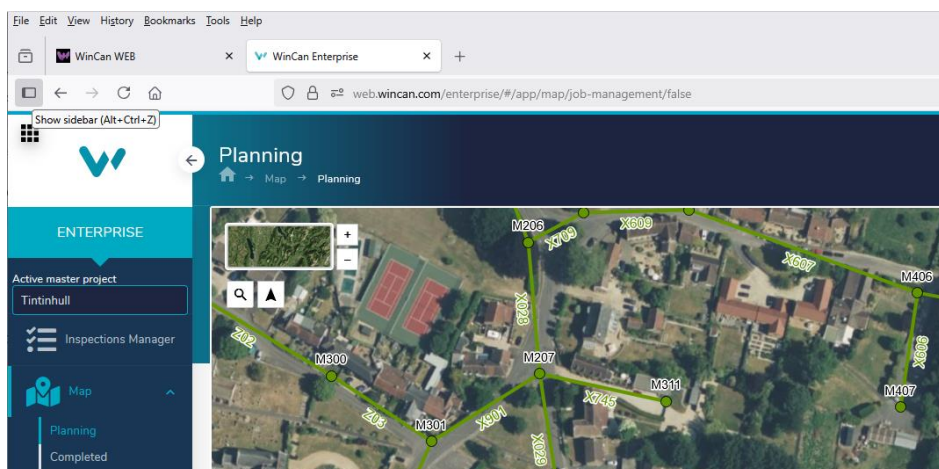
It is possible from now to switch easily between both modes hitting the corresponding browser tab (3).

Web mode

This mode shows the classic project list with all single projects that have been uploaded from the WinCan software. Master projects also appear in the list and are marked accordingly (4):

Enterprise mode

This mode gets access to the master projects that allows the company administrator to create, manage and plan cleaning, TV survey and rehabilitation jobs:



Preconfigurations

Working with jobs usually requires more than one user (i.e. operator, cleaner etc.) for job assignment as well as geo-referenced data to set up a master project for job creation.

The following sub-chapters describe in detail how you must proceed.

User Management

Log-in to WinCan Web with your master account, select the command *Management > Users* and push the button *Invite User*. Create a new user, assign the corresponding roles and send the invitation to the his e-mail address.

The screenshot shows the 'Users List' interface with a table of users and an 'Invite user' modal form. A red arrow points from the 'INVITE USER' button in the 'Users List' to the 'Invite user' form.

User	Company	Flex	Enterprise	Mobile App	Email	Action
Alfred Spüler1	Daniel_TV				dsteiner+cleaning1@idexcorp.com	
Daniel Steiner	Daniel_TV				dsteiner@idexcorp.com	
Christian Unternehmer1	Daniel_TV				dsteiner+contractor1@idexcorp.com	
Beat Operator1	Daniel_TV				dsteiner+operator1@idexcorp.com	

The 'Invite user' form contains the following fields:

- First name
- Last name
- Select user role: Company operator
- Choose enterprise role: VX operator
- Email address: user1@company.com
- Auto Unassign after (days): 0
- ☐ Two factor authentication is required
- Buttons: SEND AN INVITATION, CANCEL

The invited user will then get a message with a confirmation request. After confirmation and entering a personal password the new user finally appears in the user list (see sample accounts below):

admin@company.com: master account

user role: *Company Admin* / enterprise role: *Company Admin*

user1@company.com: invited user

user role: *Company Operator* / enterprise role: *VX Operator*

- **TV survey jobs** have to be assigned to this user, who must start WinCan VX on the computer in the TV-truck and download the job/project from the CLOUD to the local hard drive.

user2@company.com: invited user

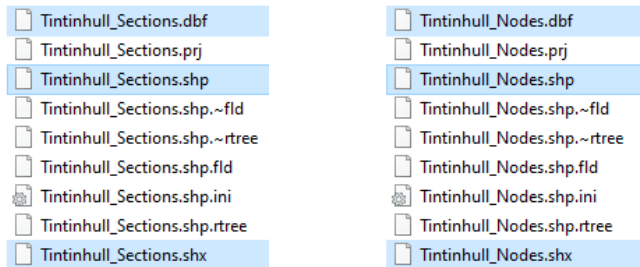
user role: *Company Operator* / enterprise role: *Enterprise Cleaner*

- **Cleaning jobs** have to be assigned to this user, who must launch the *ManholeApp* in the field and download the job/project from the CLOUD to his mobile device.

So the jobs you create later on can be assigned to the specified user.

Getting geo-referenced data for sewer objects (sections and manholes)

Displaying the layers for sections and manholes require a file set in the SHAPE format which are based on a valid coordinate system (e.g. EPSG=2056) and must be provided by the owner of the sewer network. The sample below shows the file sets for the municipality of Tintinhull (UK):

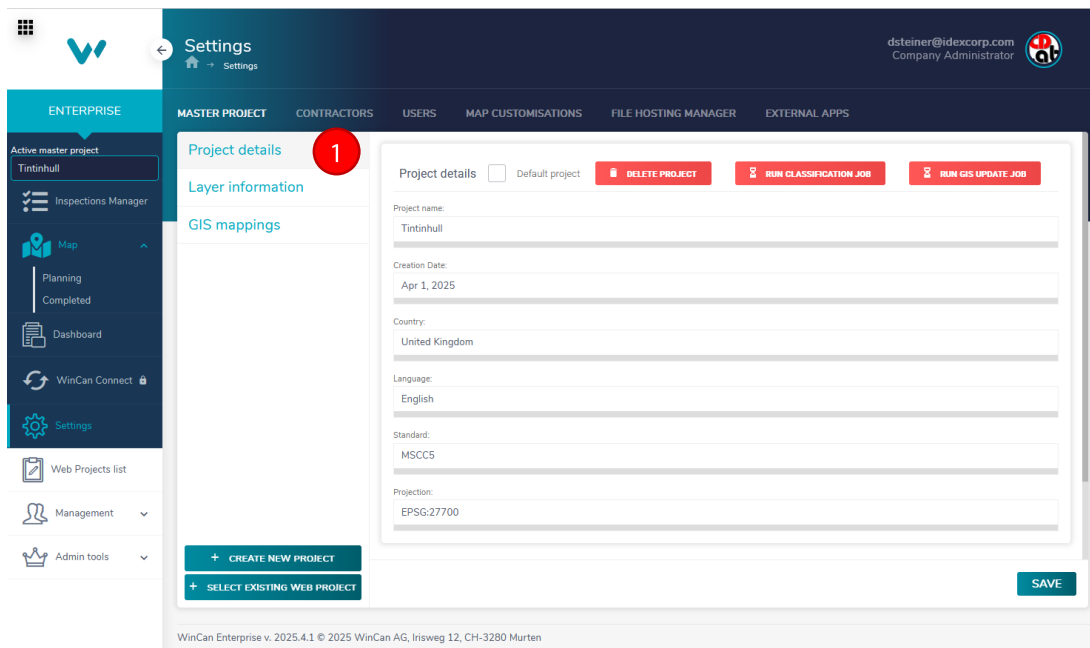


The file sets for sections and for manholes must both contain at least the components DBF, SHP and SHX. If one of these components is missing the corresponding layer cannot be shown on the map.

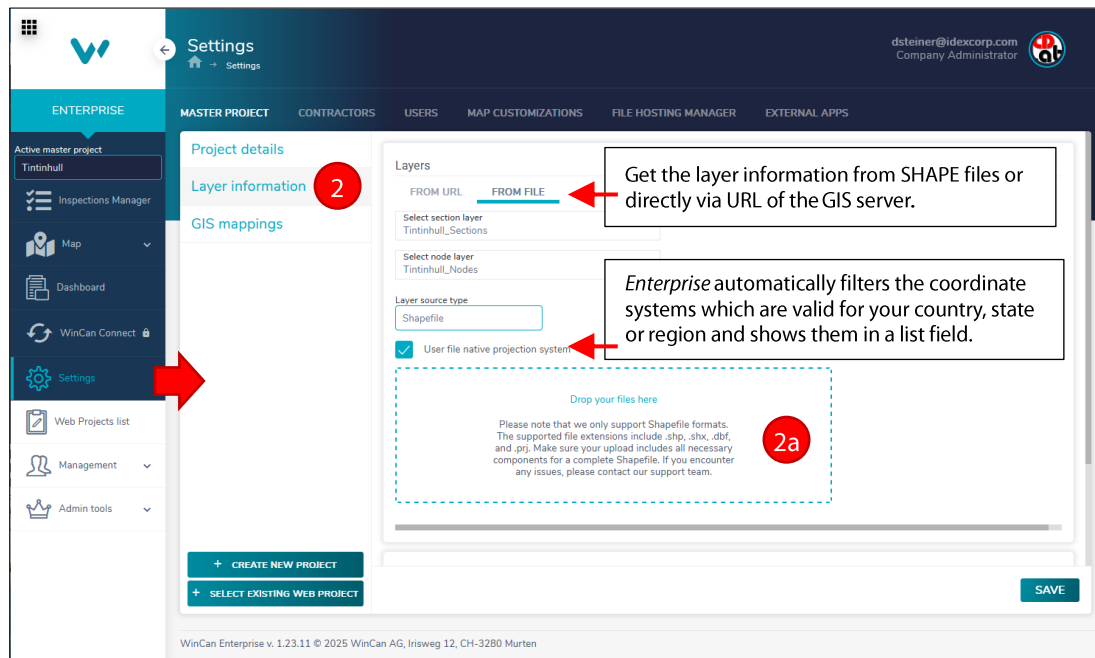
Creating a master project

A master project shows all elements of a given sewer network properly located on a background map.

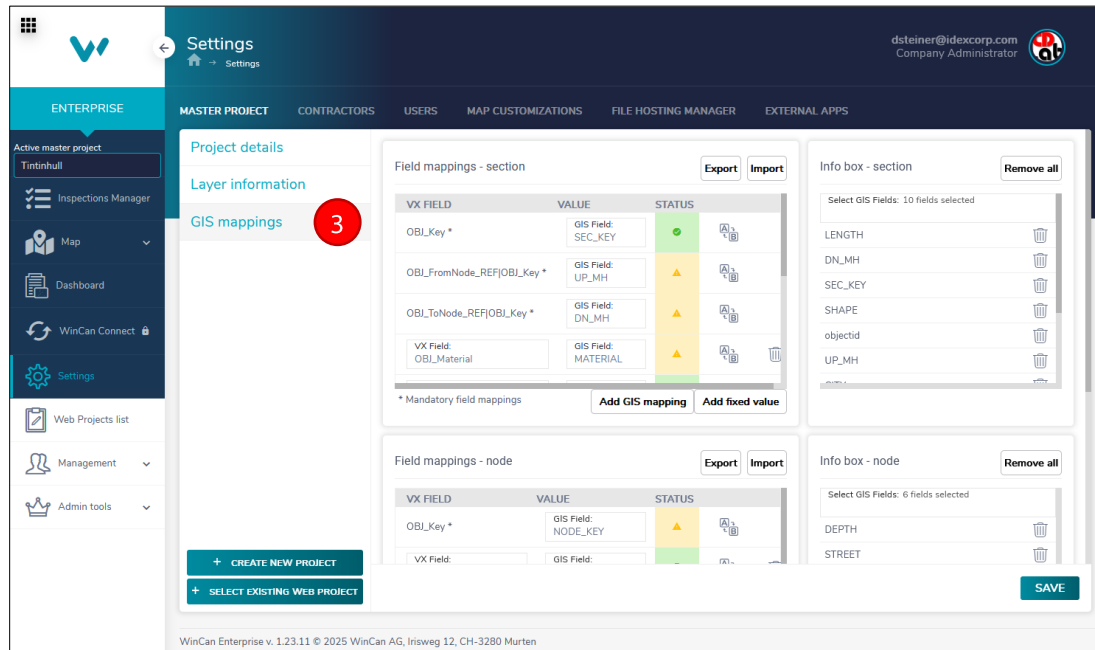
- Log-in to WinCan Web with your master account.
- Switch to the *Enterprise* mode and click on *Settings* > *Create New Project* to create a new master project based on the layer information you checked before. A wizard is going to guide you through the whole process in 3 steps.
- The first step (1) asks for basic project details like *name*, *datum*, *country/language*, *project standard* and *projection system*:



- In the 2nd step (2) you will have to set the source of the geographic data (GIS-Server or SHAPE-files): simply move a group of valid SHAPE files via *Drag & Drop* from the Windows Explorer into the file bucket (2a):



- The 3rd step asks you to do the GIS mappings: each GIS field thus must be assigned to the corresponding VX field:



The VX and the GIS field columns both provide a list box, which you can pick the desired field from.

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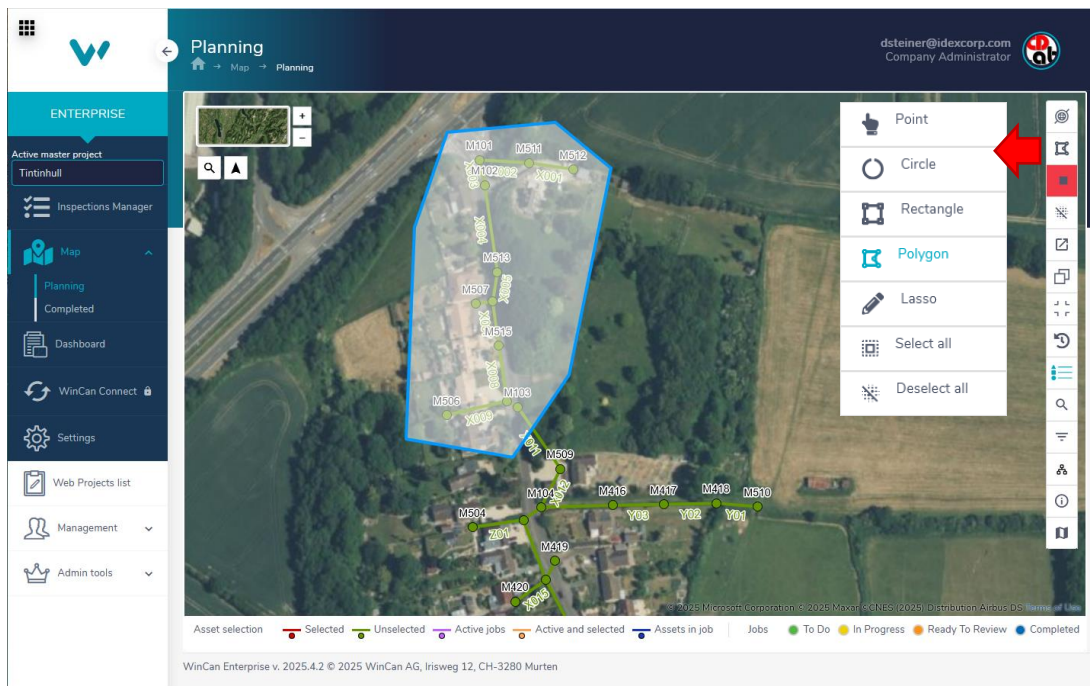
Working with Jobs

A master project is used as a map-based job management platform that allows the user to quickly highlight the desired sewer objects and assign it to a job.

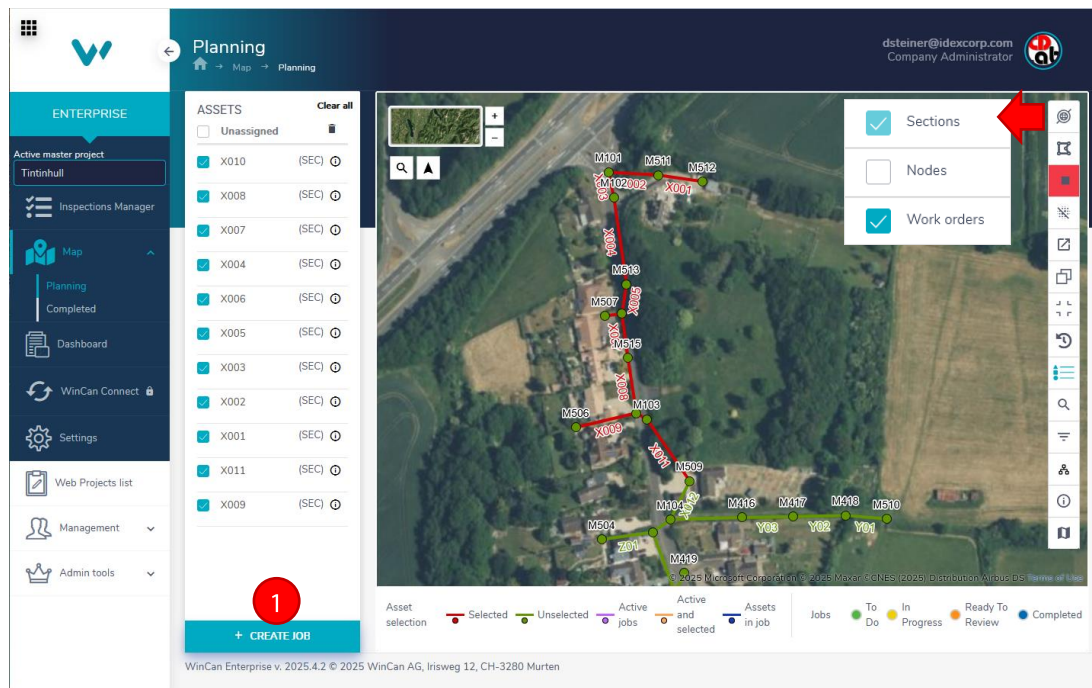
The following sub-chapters describe all the steps needed **to create, to do and to complete a job** and to show the end result on the sewer network map.

Creating jobs (work orders)

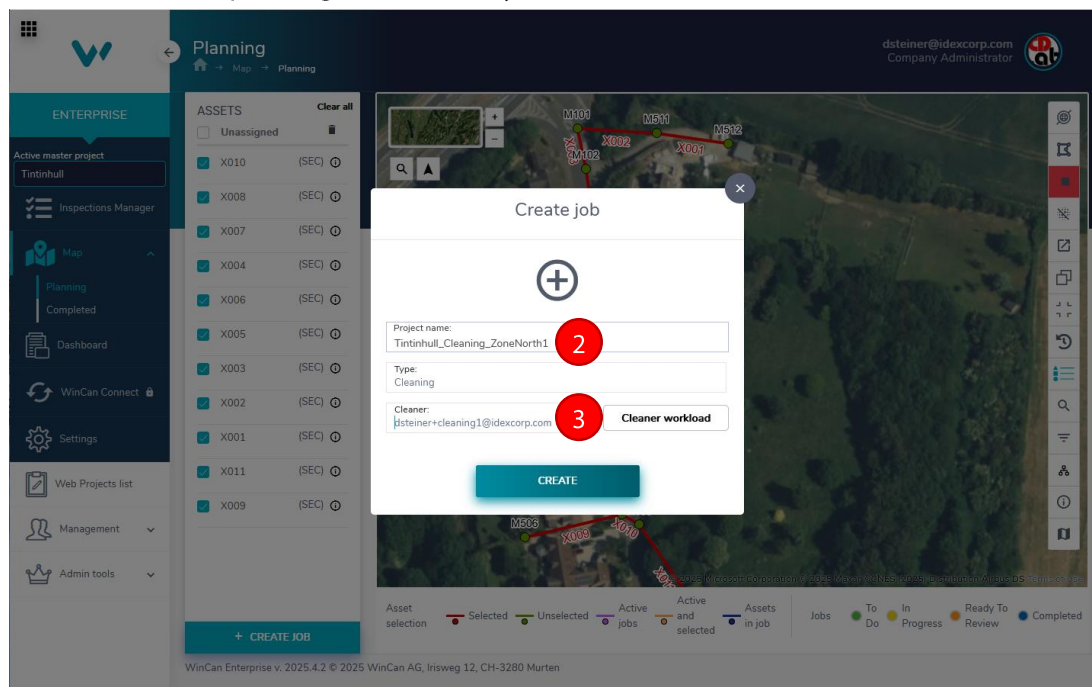
1. Log-in to WinCan Web with your master account and switch to the *Enterprise* mode.
2. Open the corresponding master project from the drop down list and click on the map.
3. Click on the command *Map > Planning* and select the desired sewer objects directly on the map.
Enable the selection mode (command button turns into RED) and choose a selection tool (e.g. polygon):



4. The selected sewer objects (e.g. sections) will then be assigned to the job:



5. Next hit the button *Create Job*, enter project name and job type (2) and assign the job to the user with the corresponding role (3). Finally confirm with the command button *Create*:



6. Wait until a message tells you the job has been successfully created. Repeat the steps 3 to 6 to create more jobs (e.g. cleaning jobs).

Click on the command *Inspections Manager*: all newly created jobs appear in the queue (status column *To Do*):

The screenshot shows the 'Inspections Manager' interface. On the left is a sidebar with the 'Enterprise' logo and a menu including 'Active master project', 'Inspections Manager', 'Map', 'Planning', 'Completed', 'Dashboard', 'WinCan Connect', 'Settings', 'Web Projects list', 'Management', and 'Admin tools'. The main area is titled 'Inspections Manager' and features a top navigation bar with filters for 'Pending media upload', 'Contractor', 'Created by', and 'Cleaner/Operator', along with a search bar. Below this, there are four columns: 'TO DO', 'IN PROGRESS', 'READY TO REVIEW', and 'COMPLETED'. The 'TO DO' column contains three job cards for 'Cleaning' tasks. Each card displays the job name, assigned user, and progress metrics for sections, nodes, and inspections. A red arrow points from the 'Inspections Manager' menu item in the sidebar to the first job card in the 'TO DO' column.

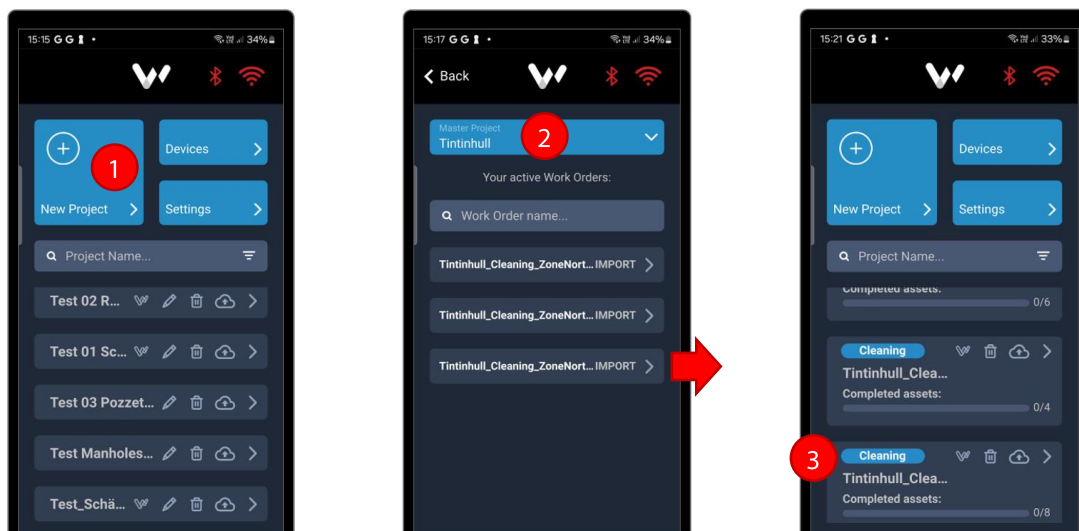
Click again on *Map > Planning* to show the active jobs on the map:

The screenshot shows the 'Map > Planning' interface. The sidebar is similar to the previous screen, but the 'Map' menu item is highlighted. The main area displays a satellite map with various job locations marked by colored dots and labels. A red arrow points from the 'Map' menu item in the sidebar to the map area. At the bottom, there is a legend for 'Asset selection' (Selected, Unselected, Active jobs, Active and selected, Assets in job) and 'Jobs' (To Do, In Progress, Ready To Review, Completed). The map shows several 'Cleaning' zones and individual job points labeled with codes like M512, M513, M507, etc.

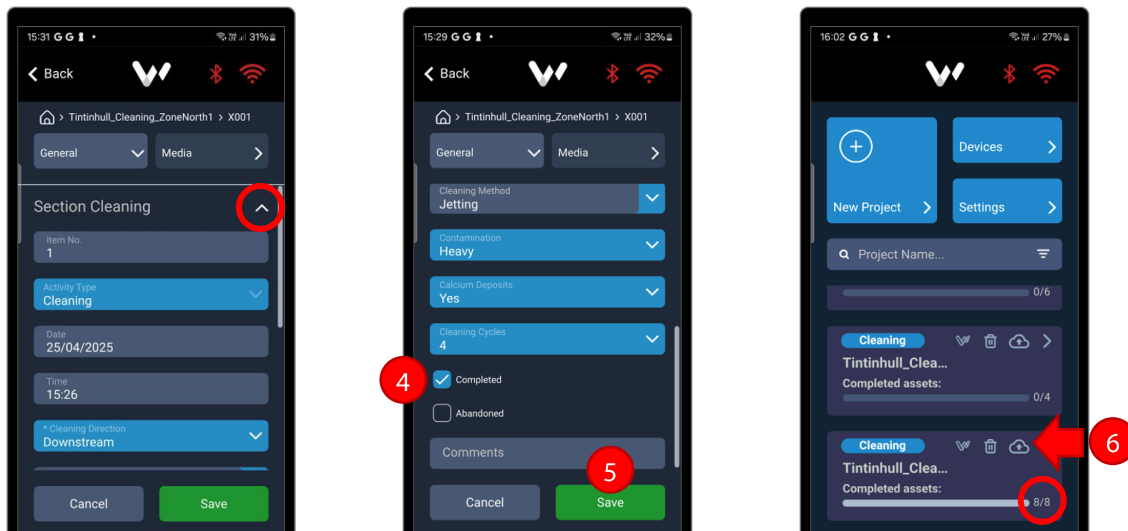
Doing a cleaning job with the ManholeApp

Take your mobile device, run the ManholeApp and log-in with the corresponding user account for cleaners.

Click on *New Project* to connect to the master project (2) and download the available cleaning jobs hitting the button *Import*. The jobs then are moved to the project list and marked with the blue label *Cleaning* (3):



Open the first project, clean all sections step by step and confirm each section cleaning hitting the check box *Completed* (4) and pushing the *Save* button (5):



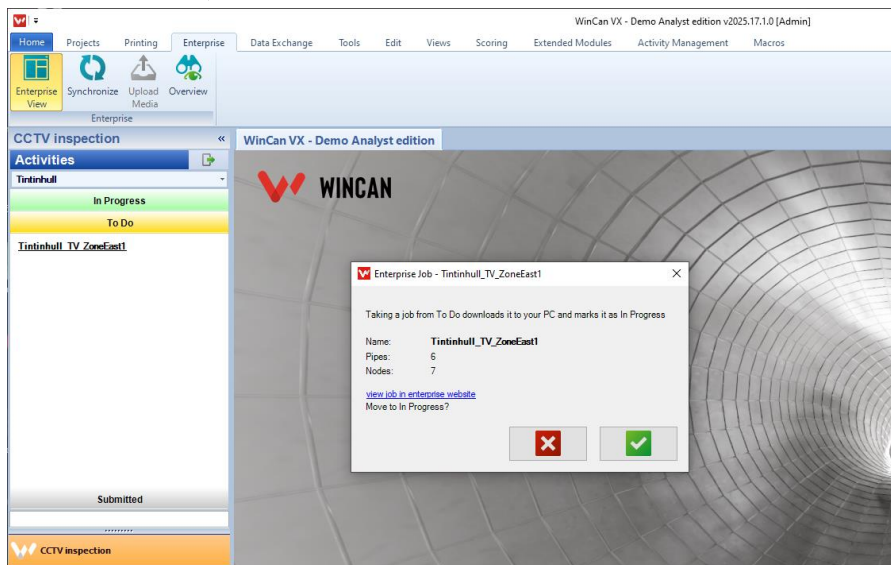
As soon as the last section of a project has been cleaned the job is done and thus ready for upload (6).

Doing a TV survey job with WinCan VX

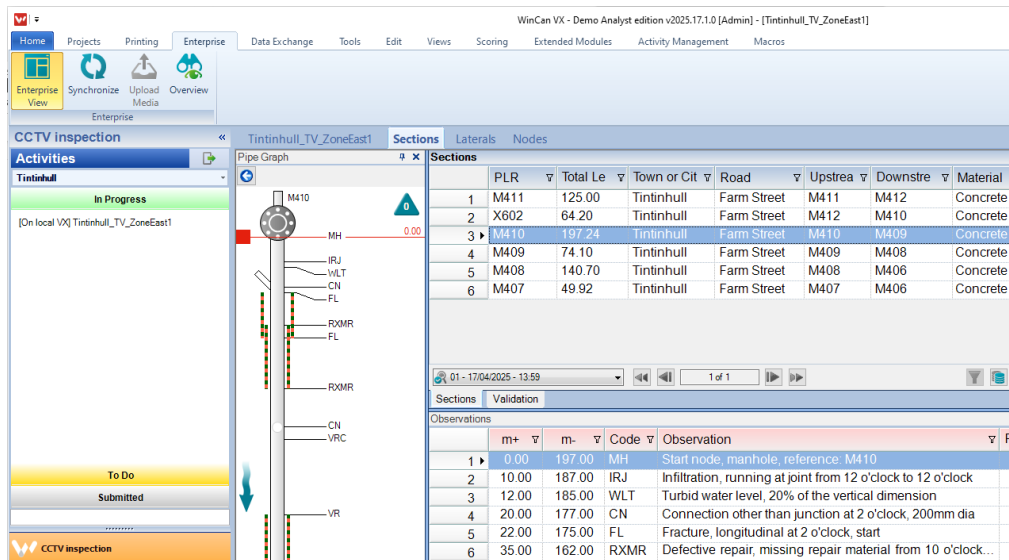
Run WinCanVX, log-in with the corresponding user account for TV operators and hit the command button *Enterprise > Enterprise View*. Instead of the project list the following predefined project groups are shown in the corresponding panel:

- **To Do:** projects created in *WinCan Enterprise* and ready for download to the local hard drive
- **In Progress:** projects which the operator is working on and has still got sections to be inspected.
- **Submitted:** projects that have been finished and sent back to *WinCan Enterprise*

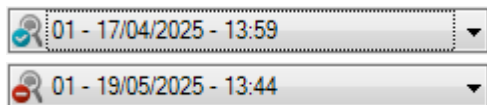
1. New TV survey jobs created from the master project are automatically put into the group **To Do**. Click on the desired project to download and open it; confirm the dialogue below and start the section survey in WinCan VX as usual.



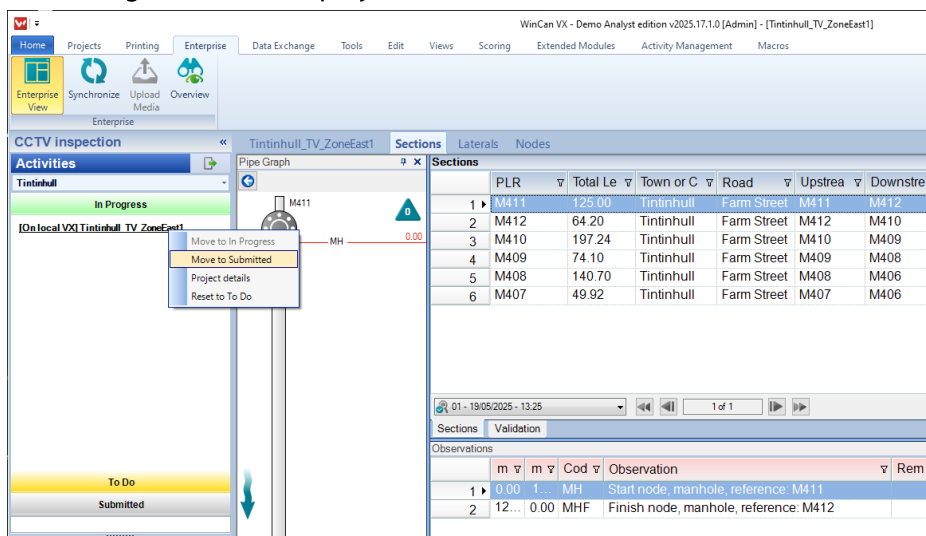
2. The project is automatically moved into the group *In Progress*:



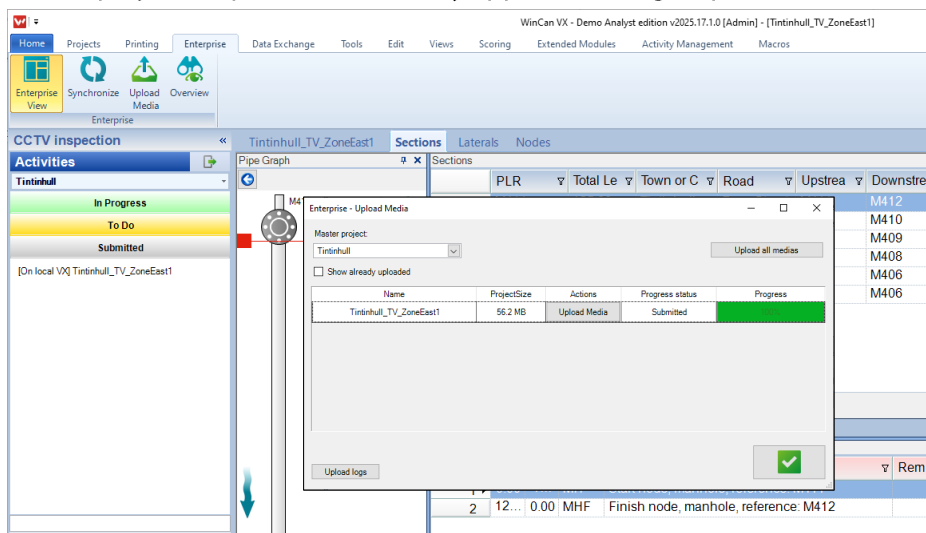
3. A project is finished as soon as **all section inspections** are marked either as *Completed* or as *Abandoned*:



4. Next right click on the project link and select the command *Move to Submitted* in the context menu:



5. The project is uploaded and finally appears in the group *Submitted*:



Media files (i.e. video clips and photos) can be uploaded in a separate step hitting the command button *Enterprise > Upload Media*

Following the job progress in WinCan Enterprise

Sent projects or jobs are going to be uploaded to the CLOUD and the corresponding job status is shown in *WinCan Enterprise*. Proceed as follows, to complete the job:

- Click on the icon *Inspections Manager*: jobs that have been done and uploaded in the field will then be moved to the status column *Ready to Review*:

The screenshot shows the 'Inspections Manager' interface with four status columns: TO DO, IN PROGRESS, READY TO REVIEW, and COMPLETED. A 'Project approval' dialog is open, asking 'Do you want to approve and merge 'Tintinhull_Cleaning_ZoneNorth1' project to master project?'. The dialog has two buttons: 'APPROVE PROJECT' (labeled 1) and 'CLOSE' (labeled 2). The 'READY TO REVIEW' column contains three job cards for 'Cleaning' tasks. Each card shows progress for sections, nodes, and inspections, along with 'APPROVE' and 'WORK DETAILS' buttons.

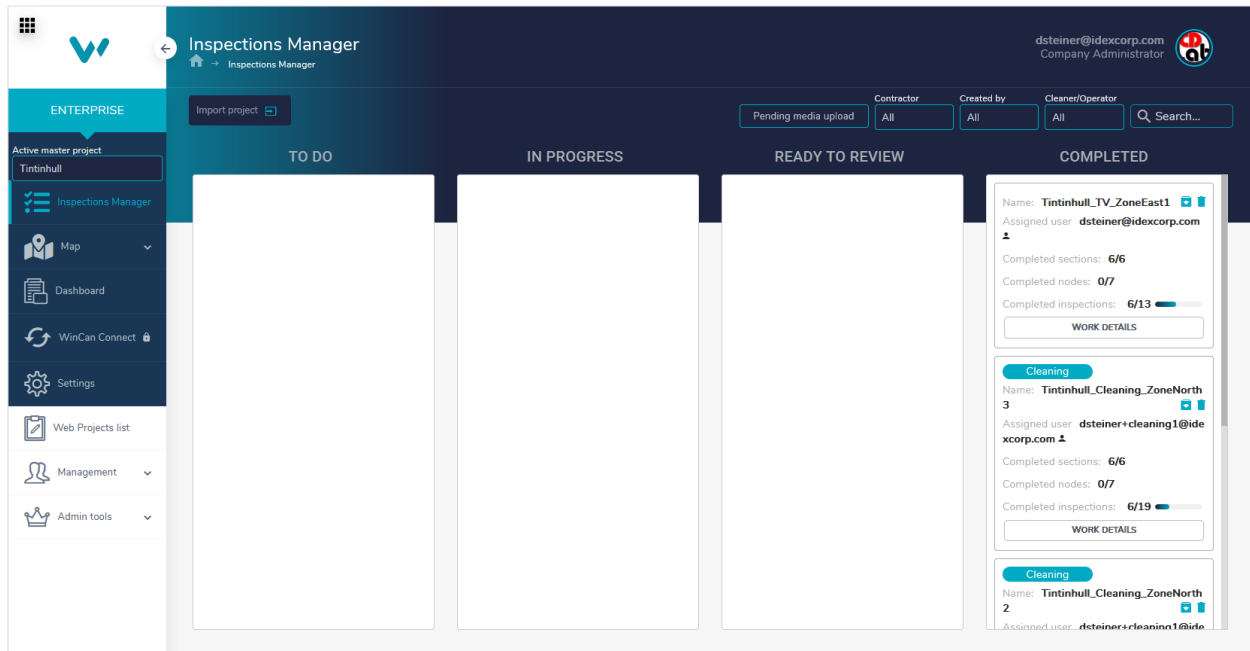
- Use the button *Approve* (1) to move the job **directly** to the status column *Completed*
- Use the button *Work Details* (2), confirm the inspection for each section activating the check box in the column *Approved* (2a) and hit the button *Submit* (2b) to have the whole job moved to the status column *Completed*.

The screenshot shows a detailed view of a project in the 'Inspections Manager' interface. On the left, there's a sidebar with navigation options. The main area is divided into two sections: 'Condition grades' (a bar chart) and 'SECTIONS' (a table). The 'SECTIONS' table has columns for KEY, INSP. DATE, HIGHEST GRADE (STRUCTURAL, OPERATIONAL), and APPROVED. The 'APPROVED' column has checkboxes, with the first one checked (labeled 2a). Below the table is a 'Submit' button (labeled 2b). On the right, there's a map view showing the project location with various markers and a legend.

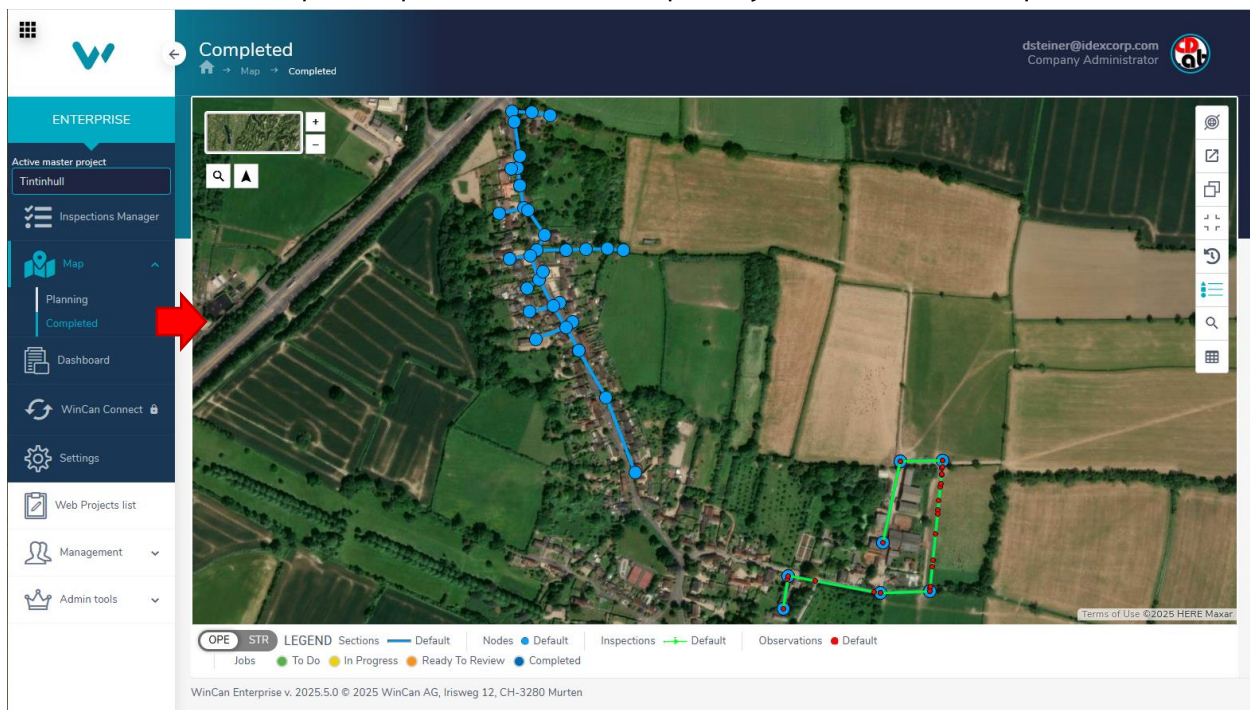
The job is finally merged to the master database and appears in the column *Completed*. Mind that you cannot undo this step as the job status *Completed* cannot be changed.

If you notice too late that a survey job must be repeated due to quality faults, select the same sewer objects again on the map and create a new project/job.

The example below illustrates how the maintenance state of the sewer network is shown in *WinCan Enterprise* after 3 cleaning jobs and 1 TV survey job have been completed:



Select the command *Map > Completed* to have all completed jobs shown on the map:



Monitoring of the sewer network

The amount of completed jobs finally return a detailed image of the current status of the sewer network. So the owner will be able to **plan** future cleaning and survey jobs as well as rehabilitation works (based on the TV surveys) at given intervals.

Besides that *WinCan Enterprise* must also be able to look *into the past* as well as *into the future* and thus provide specific command buttons:

- Show status of sewer network at a given time in the **past** (e.g. year 2024)
- Plan/Complete jobs for the **current** year and show the sewer network accordingly (e.g. year 2025)
- Show status of sewer network at a given time in the **future** (e.g. year 2030)