

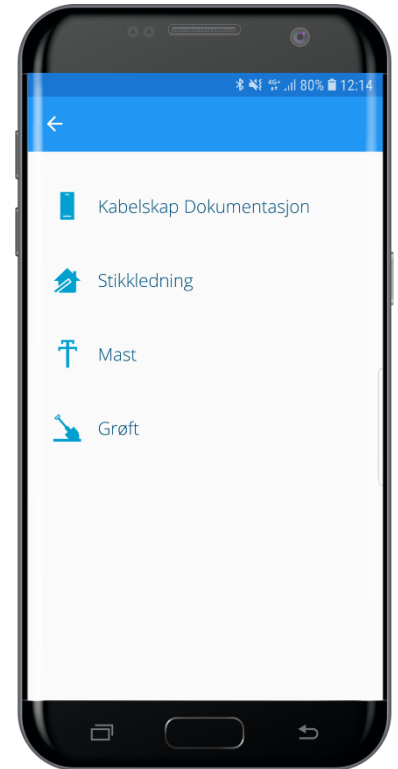
What is Network Collector?

Grid companies have different ways of working. Some hire contractors, others have their own staff, and many might have a combination of the two when the need is there. When it comes to documentation, what all of their processes have in common is that there are often many steps, a lot of paperwork, and perhaps also some unnecessary duplication of work. Furthermore, it takes too much time.

Network Collector has been developed to ensure that documentation of the low voltage grid is completed as soon as the work is done, by the field workers themselves. The idea is as simple as the execution: Whoever is out in the field, inputs the information they themselves have collected. This way, we avoid the feeling that the tool causes extra work for the field worker, but rather frees up time that was previously used for administrative tasks. Thus, these heroes can focus on what they do best, whilst still avoiding doubling up on work by someone else having to go back to the installation location to document the work. This is part of the "field heroes" ideology, which aims to increase field workers' motivation and feeling of ownership.

Developed for users – by users

Network Collector is developed in cooperation with grid companies and field workers, and this close cooperation will continue when we develop the service further. Even though we know that grid companies have different ways of working, we also know that tasks performed in the field are often very similar. The first version contains functionality for documentation of the most common tasks in the low voltage grid: cabinets, service lines, masts and ditch. One definite advantage of standardising this is that an external contractor hired in for a job will experience the same work practice at different grid companies.



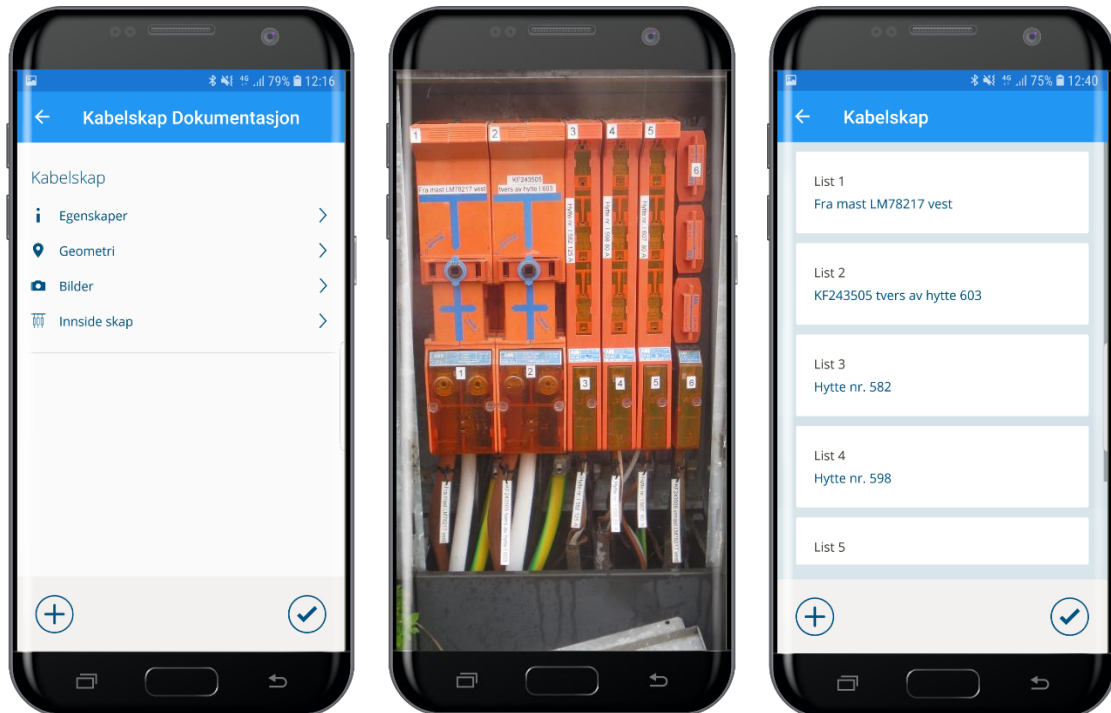
Simple registration

Each and every type of assignment offers the possibility to register properties, measure in the exact position, and add photos. In the configuration, you add your own demands for surveying precision. Every assignment has defined minimum demands that needs to be completed in order to close the assignment. Everything that is not a part of these demands can be deleted after having been added to the assignment – illustrated by a bin symbol.

Work orders – planned and flexible

In order for the field workers to locate the relevant work orders in the map, these need to be established. Still, you are not entirely controlled by planned work orders if something unforeseen shows up. In all work orders,

there is a “plus button” that can be used if the field worker spots something extra that ought to be registered within the same assignment, perhaps something that the planner did not consider when the work order was set up? The same applies when you register work that has not been pre-defined as an assignment. In this situation, the plus button can be used to set up a new task. Network Collector also helps the field worker find the way between assignments, by setting up a driving route with road descriptions in Google Maps, straight from the application.



Configuration – what, how and why?

For the trial period, Network Collector will be launched with a standard configuration. This means that map views and lists with various assets, for example lists of available types of cable in a service line assignment, will be the same for all users.

However, as a subscriber to the service, you can customise it to your needs. This is done with the field workers in mind, ensuring that they do not have to scroll through long lists of possible kinds of fuses from different suppliers when, in reality, there are only five real alternatives in use by the grid company. Configuration of what types of assignments you want to have available for each team is also available. An excavating contractor might only need the option of registering a ditch. It is also possible to configure which parts of an assignment are obligatory. Many people might want the photo documentation to be obligatory, whereas others do not have this need.

The first customers will receive direct assistance from Powel to see this configuration through. In future, a simple website for easy self-service of each team's configuration will be available.

A new practice for grid documentation

Network Collector is not just a new tool, it also represents the start of a new way of thinking about documentation. In conjunction with the start-up, we can offer consultancy in the form of a workshop or another preferred format, to get you as a customer to join our thought process. How does this enable you to streamline your entire work process, and not least, prepare you for the future? In such a process, there will also be a possibility for expanded configuration of Network Collector, ensuring that it fits individual company needs. Perhaps you need other types of jobs or additions to the standard configuration? Is there a need to add risk analysis and end control in order to make the entire work process digital for the field worker? We encourage you to have a dialogue with us.

What do you need to get started?

The first step is to create a team with an optional number of users on Powel.net. As soon as this is done, you can download the Network Collector app from Google Play and immediately try it on your Android phone. All users added to the team will receive a welcoming e-mail with a link to the download. To log on, use the same user name and password as you do on Powel.net.

At present, Network Collector is only available for Android.

Precision when surveying

The demands for accuracy when it comes to surveying keep rising. Therefore, it is very important to be able to document accuracy in order to get the desired data quality. Network Collector is made in such a way that it works with the mobile phone's GPS, but at present the accuracy is not very precise for most people. However, by attaching an external GNSS unit, you can achieve surveying quality. Measurements will be of both ground and height, and with the correct equipment, results will meet the requirements of the upcoming wiring chart standard.

Feedback from a pilot customer was clear: getting a notification of what is to be documented, together with demands regarding precision, gives correct data with a quality guarantee.



Network Collector is compatible with several GNSS units, although at present it is developed particularly for use with Trimble Catalyst. Trimble Catalyst is a relatively cheap pole with a high degree of precision. As a user, you sign up for a separate subscription for GNSS services with Trimble where the price will be set according to your need for precision. With sufficient signal, it is possible to achieve accuracy down to 1-2 centimetres. For an optimal utilization we recommend implementing both the Trimble licence and correction data from a CPOS-licence from Kartverket (the Norwegian Mapping Authority) in the configuration of your powel.net team. We can help you set up this.

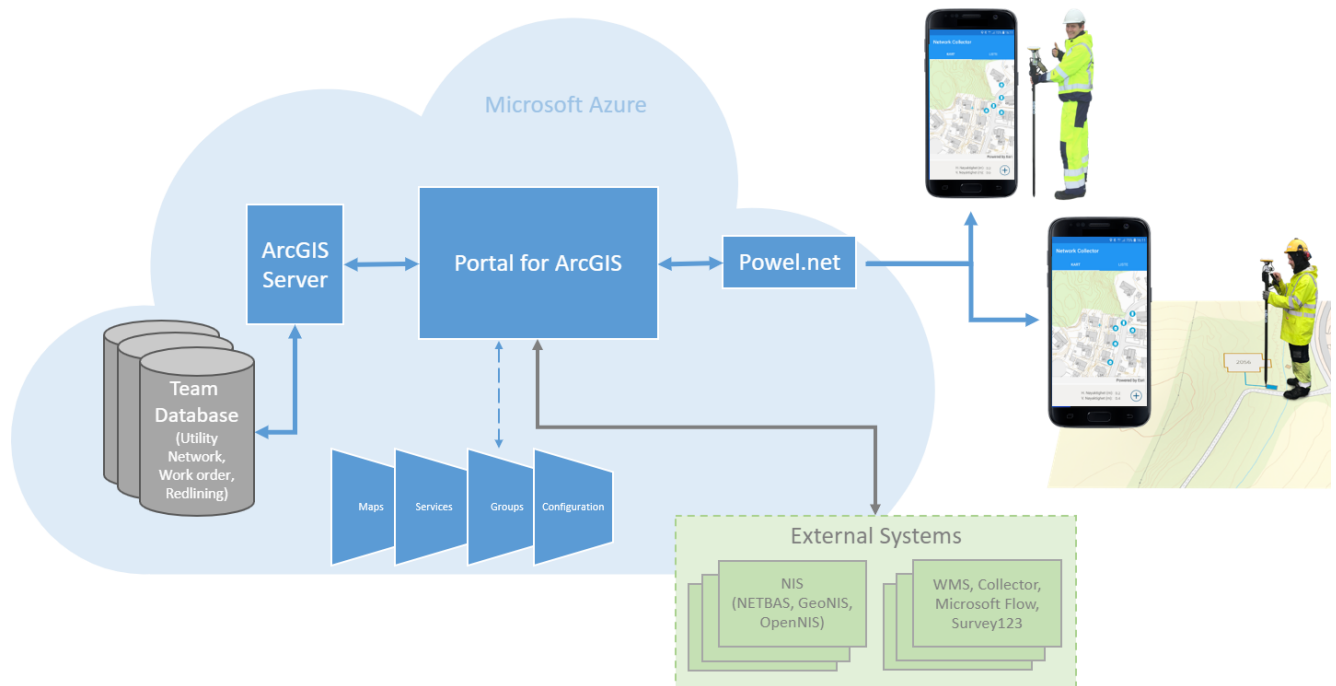
Network Collector is a cloud solution – what does that entail?

Network Collector is a cloud service built on the Microsoft Azure platform. This provides advantages such as reduced costs, increased flexibility and improved security. The log-in is via powel.net and all data will be available via web services. Powel ensures the secure handling of this data.

As a SaaS solution, Network Collector places no demands on your own IT system. Powel will ensure that you always have the latest version through continuous updates via Google Play. Pay attention to our release notes for the latest changes.

As a consequence of this being a cloud solution, Network Collector only works online. However, in the event of network problems, you will not lose your work as the solution saves data temporarily in order to upload them again as soon as you have reception again.

System architecture



When a new team is set up, it is automatically connected to a database via ArcGIS Enterprise. Saved in *postgresqlm*, this database initially contains a standard configuration with map view and other set-ups saved in a JSON file. This can easily be configured to individual needs with own grid information, optional map view, and other optional configuration such as, for example what you are able to register and how.

The ArcGIS Server delivers the service that handles each team's database and the security here is governed by portal for ArcGIS. All infrastructure can be found in the cloud platform Microsoft Azure and all data is stored in Europe. No personal data is stored, only logged-in user and user's position when this person is working.

How to get access to the data

During the trial period, you will get access to see your collected data in a dashboard in [powel.net](#).

As a subscriber, you get Network Collector delivered with an API which gives access to reading the data saved in your team's database. This API contains geometry, attributes, topology, job types, and other configuration specifically for the particular team.

Many grid companies are interested in having direct access to this data in their NIS. This service is not a part of Network Collector, but the solution is built considering this. Powel will deliver a standard solution for integration with NIS solutions delivered by us (NETBAS, OpenNIS and GeoNIS), as an additional product to each NIS solution. As of today, this is at a development stage.

Should you wish to adjust your data or utilise them connected to a service not delivered by Powel, we can assist with consultancy services and help you get started.

What happens next?

Network Collector has been developed for and with grid companies. For Powel, this is part of a commitment to field solutions. We have several ideas on how to take this further, together with our customers.

As a next step, we want to make it possible to connect Network Collector with the coming product "Field planning". Thus, Network Collector can transition from being a tool to document minor changes to one that also can carry out correct documentation of larger plans - for instance a new overhead line, or a new housing development. The goal is to be able to have a seamless integration from NIS, via a simple verification process where any "as-built" changes will be documented immediately, directly back to your NIS. Are you joining us?

Questions?

If you still have questions that have not been covered here, an idea, or other feedback? We would love to hear from you, please do not hesitate to contact us on support@powel.no.