



BandSolid AMI Cleanup Solution

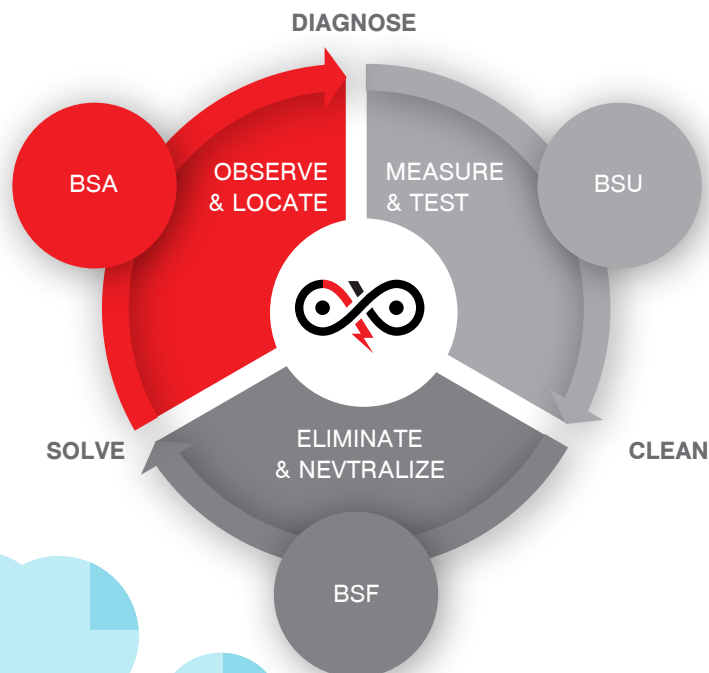
- **Enabling 100% PLC meter readout success rate**
- Following a **proven project oriented methodology through SW**
- Meter **manufacturer and PLC technology independent**
- **Continuous availability** and through a cloud based solution (BSA)
- **Measuring and diagnostics** through a measurement and testing unit (BSU)
- **Effective disturbances cleaning** with PLC band filters (BSF)
- Enabling utilization of **existing electrical utility human resources**
- **Consulting and education** for electrical utility companies
- **Lowering the utility's cost** through knowledge transfer.

Key functionalities

- **Enabling PLC meter 100% readout success rate through a project oriented approach driven by a working process oriented SW application**
- Meter **manufacturer independent** technology
- **PLC technology independent** solution
- A cloud-based software solution, for **project oriented monitoring and solving PLC communication issues** – BandSolid Application (BSA)
- **Continuous availability** and accessibility through a cloud based BSA software solution
- Instrumental equipment in the form of a **web browser based spectrum analyzer** enabling the **observation of data readout success rate** through BandSolid Unit for measurement and testing (BSU)
- **Measuring and diagnostics** through BandSolid Unit for measurement and testing of PLC signal communication directly on-site with the BSU unit
- Effective **disturbances cleaning** by removing PLC communication issues where needed with the BandSolid Filter (BSF).
- Utilization of **existing electrical utility human resources**
- **Consulting and education** for electrical utility companies or their local authorized partners

Reach 100% successful daily energy meter readout by meticulously adhering to the following iterative process:

BSA – BandSolid Application,
BSU – BandSolid Unit,
BSF – BandSolid Filter



Solving remote meter reading issues in AMI systems



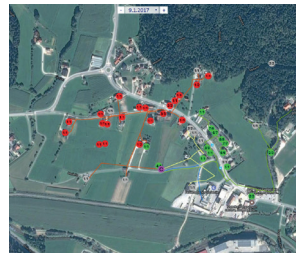
Solution building blocks

BandSolid represents a platform of methods, services and equipment enabling the electrical utility companies to approach the PLC communication problem solving issues in a project oriented way. With the help of the BandSolid Application for observing and locating (BSA), the BandSolid Unit for measurement and testing (BSU) and the BandSolid Filter (BSF) or effective disturbances cleaning, utility specialists can now proceed with an optimal decisions taking process for implementing service oriented actions related to PLC communication cleaning.

BSA – The BandSolid Application

This is a cloud-based software solution, for project oriented monitoring and solving PLC communication issues. It solves the observing and locating part of the BandSolid PLC network cleanup method. The main goals of this system are observing the meter readout success rate through a software application and steering the working process. The application can either be operated from the cloud or can be made into an on-site secure installation.

- 3 levels of end-users offering different meter data import/view possibilities
- Observing PLC communication
- Locating possible interferences
- Table and GIS generation and reporting
- Geolocation addresses determination and correction
- Events logging and archiving
- Photos, measurements and other files archiving
- Monitoring success rate statistics
- Monitoring time solving statistics
- Different user access



GIS view of project at start



GIS view of project at finish

meter number	meter type	meter status	meter location	meter address	meter readout success rate
100001	BSU-100	OK	100001	100001	100%
100002	BSU-100	OK	100002	100002	100%
100003	BSU-100	OK	100003	100003	100%
100004	BSU-100	OK	100004	100004	100%
100005	BSU-100	OK	100005	100005	100%
100006	BSU-100	OK	100006	100006	100%
100007	BSU-100	OK	100007	100007	100%
100008	BSU-100	OK	100008	100008	100%
100009	BSU-100	OK	100009	100009	100%
100010	BSU-100	OK	100010	100010	100%
100011	BSU-100	OK	100011	100011	100%
100012	BSU-100	OK	100012	100012	100%
100013	BSU-100	OK	100013	100013	100%
100014	BSU-100	OK	100014	100014	100%
100015	BSU-100	OK	100015	100015	100%
100016	BSU-100	OK	100016	100016	100%
100017	BSU-100	OK	100017	100017	100%
100018	BSU-100	OK	100018	100018	100%
100019	BSU-100	OK	100019	100019	100%
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100038	BSU-100	OK	100038	100038	100%
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100043	BSU-100	OK	100043	100043	100%
100044	BSU-100	OK	100044	100044	100%
100045	BSU-100	OK	100045	100045	100%
100046	BSU-100	OK	100046	100046	100%
100047	BSU-100	OK	100047	100047	100%
100048	BSU-100	OK	100048	100048	100%
100049	BSU-100	OK	100049	100049	100%
100050	BSU-100	OK	100050	100050	100%

meter number	meter type	meter status	meter location	meter address	meter readout success rate
100001	BSU-100	OK	100001	100001	100%
100002	BSU-100	OK	100002	100002	100%
100003	BSU-100	OK	100003	100003	100%
100004	BSU-100	OK	100004	100004	100%
100005	BSU-100	OK	100005	100005	100%
100006	BSU-100	OK	100006	100006	100%
100007	BSU-100	OK	100007	100007	100%
100008	BSU-100	OK	100008	100008	100%
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100011	BSU-100	OK	100011	100011	100%
100012	BSU-100	OK	100012	100012	100%
100013	BSU-100	OK	100013	100013	100%
100014	BSU-100	OK	100014	100014	100%
100015	BSU-100	OK	100015	100015	100%
100016	BSU-100	OK	100016	100016	100%
100017	BSU-100	OK	100017	100017	100%
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100023	BSU-100	OK	100023	100023	100%
100024	BSU-100	OK	100024	100024	100%
100025	BSU-100	OK	100025	100025	100%
100026	BSU-100	OK	100026	100026	100%
100027	BSU-100	OK	100027	100027	100%
100028	BSU-100	OK	100028	100028	100%
100029	BSU-100	OK	100029	100029	100%
100030	BSU-100	OK	100030	100030	100%
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100038	BSU-100	OK	100038	100038	100%
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100040	BSU-100	OK	100040	100040	100%
100041	BSU-100	OK	100041	100041	100%
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100043	BSU-100	OK	100043	100043	100%
100044	BSU-100	OK	100044	100044	100%
100045	BSU-100	OK	100045	100045	100%
100046	BSU-100	OK	100046	100046	100%
100047	BSU-100	OK	100047	100047	100%
100048	BSU-100	OK	100048	100048	100%
100049	BSU-100	OK	100049	100049	100%
100050	BSU-100	OK	100050	100050	100%

Table view of project

meter number	meter type	meter status	meter location	meter address	meter readout success rate
100001	BSU-100	OK	100001	100001	100%
100002	BSU-100	OK	100002	100002	100%
100003	BSU-100	OK	100003	100003	100%
100004	BSU-100	OK	100004	100004	100%
100005	BSU-100	OK	100005	100005	100%
100006	BSU-100	OK	100006	100006	100%
100007	BSU-100	OK	100007	100007	100%
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100014	BSU-100	OK	100014	100014	100%
100015	BSU-100	OK	100015	100015	100%
100016	BSU-100	OK	100016	100016	100%
100017	BSU-100	OK	100017	100017	100%
100018	BSU-100	OK	100018	100018	100%
100019	BSU-100	OK	100019	100019	100%
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100021	BSU-100	OK	100021	100021	100%
100022	BSU-100	OK	100022	100022	100%
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100027	BSU-100	OK	100027	100027	100%
100028	BSU-100	OK	100028	100028	100%
100029	BSU-100	OK	100029	100029	100%
100030	BSU-100	OK	100030	100030	100%
100031	BSU-100	OK	100031	100031	100%
100032	BSU-100	OK	100032	100032	100%
100033	BSU-100	OK	100033	100033	100%
100034	BSU-100	OK	100034	100034	100%
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100036	BSU-100	OK	100036	100036	100%
100037	BSU-100	OK	100037	100037	100%
100038	BSU-100	OK	100038	100038	100%
100039	BSU-100	OK	100039	100039	100%
100040	BSU-100	OK	100040	100040	100%
100041	BSU-100	OK	100041	100041	100%
100042	BSU-100	OK	100042	100042	100%
100043	BSU-100	OK	100043	100043	100%
100044	BSU-100	OK	100044	100044	100%
100045	BSU-100	OK	100045	100045	100%
100046	BSU-100	OK	100046	100046	100%
100047	BSU-100	OK	100047	100047	100%
100048	BSU-100	OK	100048	100048	100%
100049	BSU-100	OK	100049	100049	100%
100050	BSU-100	OK	100050	100050	100%

Panel of projects

BSA	BSA-GMS v.2	PLC Grid Management System application v.2
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BSU – The BandSolid Unit

This product represents actual instrumental equipment in the form of a spectrum analyzer and/or oscilloscope enabling the observation of data readout success rate through measuring PLC signal communication directly on-site where the problem has been detected through the cloud based software. It solves the measurement and testing part of the BandSolid PLC network cleanup method giving a direct insight into the PLC line signals.

- Units for measurement and testing of physical level of PLC communication
- Designed for CENELEC A-band, G3 or PRIME frequency bandwidth
- Used for specific outdoor and high voltage environment
- Solid construction and design
- EN 61010 compliance

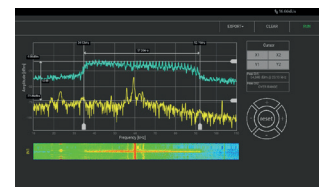


BSU-M1000

BSU	BSU-100	Measurement coupling RX unit (30kHz-100kHz)
	BSU-T100X	PLC bandwidth test unit (30-100kHz)
	BSU-M1000	Portable spectral analyser unit for PLC measurement
	BSS-M1000L	Portable lab T&F measurement system
	BSS-U1200	Portable UPS 1200VA for BSS-M1000L



PLC S-FSK measurement



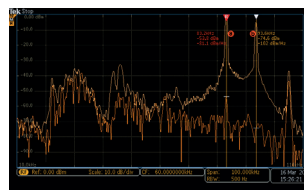
PLC G3 measurement



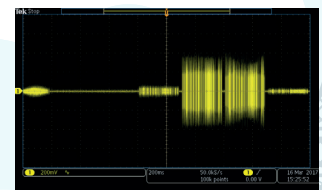
BSU-100, BSU-T100X



BSS-M1000L, BSS-U1200, BSU-100



PLC S-FSK freq. measurement



PLC S-FSK time measurement

BSF – The BandSolid Filter

This range of filters solves the measurement and testing part within the BandSolid PLC network cleanup method. The filters implement effective disturbances cleaning by removing PLC communication issues where needed.

- Designed for CENELEC A-band, G3 or PRIME frequency bandwidth
- 40dB attenuation
- Made for a fuse rated current
- Solid construction and design
- EN 50065 compliance

BSF	BSF-1P/35A	1-phase 35A PLC filter
	BSF-3P/35A	3-phase 35A PLC filter
	BSF-3P/63A	3-phase 63A PLC filter
BSF-PB	BSFS-PB 1P/10A	1-phase portable 10A PLC filter
BSF-EXR	BSF-EXR 3P/63A	3-phase 63A PLC filter cabinet
	BSF-EXR 3P/125A	3-phase 125A PLC filter cabinet



BSF-1P/35A, BSF-3P/35A



BSF-3P/63A



BSFS-PB 1P/10A



BSF-EXR 3P/125A



BSF-EXR 3P/63A