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Issue:	1
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Level 2

Signalling Power Distribution Diagrams

Module C CAD Cell Symbol Library – EP Low Voltage
Operational Equipment

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Reference documentation

IEC 60617	Graphical Symbols for Diagrams
NR/SP/ELP/27300	Specification for Computer Aided Design Formats for Electrification and Plant Documentation

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1 Scope

This document has been developed to support the symbols required for signalling power distribution network schematics and associated detailed design, when using computer aided design (CAD). The library is split to cover block cable diagrams, single line or schematic diagrams, operational diagrams and power (covering electrification, plant and building services, etc.). The symbols are provided with tags to enable intelligence to be added to the documentation.

Engineering design should be provided to this standard, except where legacy engineering details conform to previous standards for symbols and the partial use of this standard would result in confusing information being presented. In such cases, the previous standards should be used, where appropriate. Conformity of presentation to this standard should be considered if the engineering details are redrawn. It should be documented in the design specification which engineering details are to be redrawn in conjunction with the project.

2 Overview

- a. The CAD cells specified in this document shall be used in the production of all new records for Network Rail infrastructure.
- b. In case of conflict with NR/SP/ELP/27300, this module shall take precedence, so as to enable compliance with the configuration control requirements of Module F.
- c. The schematic diagram components (EPS) CAD cell library shall be used for the production of all drawings for low voltage operational equipment power distribution systems, electrification, plant, building services diagrams, etc.
- d. The block cable diagram components (EPB) CAD cell library shall be used for all other areas of E&P documentation.
- e. This document specifies the characteristics of all cells in the EP library that will be used as an aid to designers.
- f. It also specifies the process for requesting additions or changes to the library. It is expected that this document will expand and evolve as additional cells are created.
- g. The cells shall be constructed in accordance with IEC 60617.
- h. The cell attributes specified in this document provide information regarding the generic properties of the cells, MicroStation or AutoCAD settings and constraints that are to be used when creating a cell.
- i. The cell attributes also identify the structure of the EP CAD cell library, requirements and process for the revision of existing cells within the library and the introduction of new cells into the library.
- j. The EP CAD cell dictionary pages show each individual cell within the library.
- k. Issue of the EP CAD cell library is in electronic form and will comprise the cell library (.cel), pdf versions of the cell index and cell dictionary, in addition to this document.

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3 Definitions

AutoCAD	Computer-aided design software package produced by Autodesk
BD	Block cable diagram – defined in clause 4, item (2)
CAD	Computer-aided design
Cell	A predefined CAD drawing which can be used multiple times
Cell dictionary	Collections of cells represented individually on a page, defining all the properties of the cell
Cell library	A collection of cells grouped together and saved in a single file
EPS	EP schematic diagram component library
EPB	EP block cable diagram component library
EPT	EP template drawing library
Grid	Grid points displayed to assist the creation of cells
GWire	Graphical wiring – software application as an add-on to Bentley MicroStation for electrical design purposes
MicroStation	Computer-aided design software package produced by Bentley
NRG	Network Records Group
Palette	A collection of thumbnails shown on a floatable tool bar.
SD	Schematic diagram (see clause 4, item (1)) cell inserted into the EPS library
SLD	Single line diagram constructed from EPB or EPS library cells
Standard sheets	Collection of cells which have been combined to represent a common signalling circuit or function. The circuit would be grouped as another cell, i.e. nested cell, and saved in a cell library
Tag	An individual attribute (part of the tag set). Each tag is configured as text, integer or real number
Tag set	A collection of tags associated with the cell
TD	Template drawing (see clause 4, item (3)) for insertion into the EPT library

4 The cell libraries

- The diagram below gives an overview of the cell library structure.