ABES
Advanced Bridge Engineering Systems

Product Information Sheet
ABES geoCon

ABES Engineering Software
Research and Development

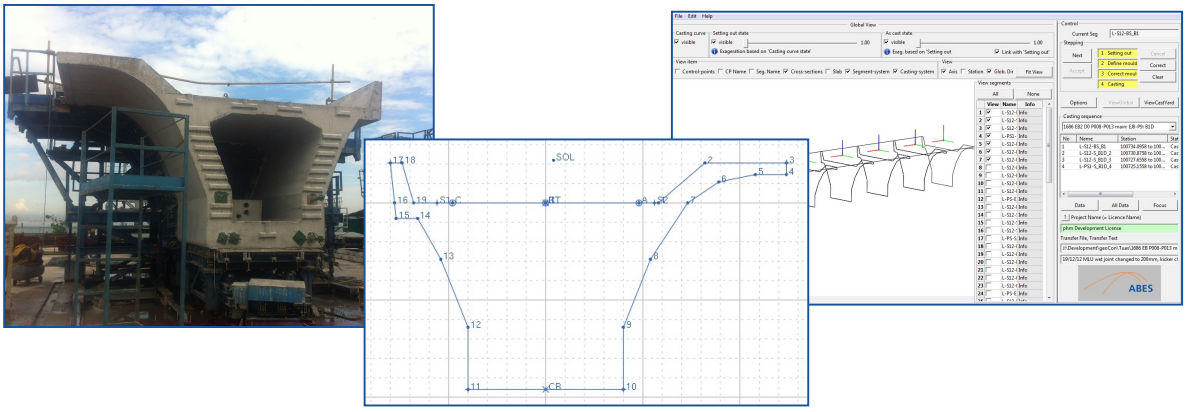
ABES geoCon is a software product supporting geometry control of pre-cast concrete bridge segments.

ABES geoCon provides the following general functions:

- Geometry control for short-line and long-line casting, and combination of the two
- Provision of setting-out data for match-casting
- Processing of survey data of newly cast segments
- Determination of casting errors in match-cast segments
- Automated correction of casting errors in sub-sequent segments
- Tolerance checks after every survey
- Optional cloud-based quality control
- Documentation and record keeping of survey and casting data

ABES geoCon can be customised to accommodate data from all common survey systems.

- Total station assigned to single casting cell
- Total station covering multiple cells
- Levelling instrument with offset measurement
- Any other automated or analogue survey system



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ABES geoCon uses a novel error compensation algorithm providing superior accuracy and flexibility.

- Unlimited number of control points per segment
- Individual control point placement for each segment
- Unrestricted positioning of control points anywhere on the cross-section
- Optional smearing of error correction over several segments
- Bulk head and casting cell movement or settlement fully considered
- Cross-section centres can be offset to the road alignment
- Variable cross-fall within segments
- Setting-out data for stay-cable anchors
- Sub-structure segments for piers and pylons in horizontal or vertical match-casting systems

ABES geoCon provides optional functions to manage project-specific casting yard layouts (Virtual Casting Yard).

- Unlimited number of casting cells within casting yard
- Unlimited number of survey stations and survey towers
- Long-line beds and short-line casting cells, combination of methods
- Control points on casting cells and bulkheads to facilitate control survey
- Record keeping (casting cell, environmental data, survey and casting team etc.)
- Quality control feedback and tolerance check after every survey
- Optional cloud upload to support off-site supervision

ABES IT
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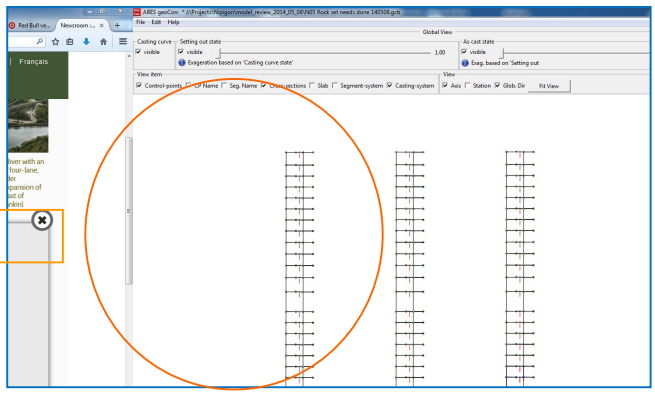
ABES geoCon is driven by a highly functional graphical user interface.

- Instant 3D and 2D Graphical visualisation
- Fully compatible with standard spreadsheet programs
- Direct file transfer between total station and ABES geoCon
- Cloud upload of survey data to support quality control
- Many tools for plausibility checks

ABES geoCon allows for full flexibility in the use of various coordinate systems and SI-units for data input and output alike.

- 3D bridge project coordinates
- Casting yard and survey tower centred coordinates
- Local casting cell coordinates
- Survey data can be entered in absolute coordinates, or optionally in offsets relative to the setting-out data

ABES geoCon generates several automated reports pertaining to practical casting yard requirements.

- Specific setting-out sheets for every segment
- Casting reports for every segment including setting-out geometry, as-cast geometry and casting error report
- Survey summaries for quality control purposes, optional cloud upload
- Log file of every recorded action in the course of a project
- Automated reports in .pdf format
- Spreadsheet-compatible tables with filters for data selection
- CAD-compatible .dxf files of setting-out and as-cast data
- Text files