Siemens forged 90 years of world wide experience in a ready to run crane control platform which contains of configurable standard function modules. These modules are integrated within a SIMOTION D controller: the most performant motion controller available on the market. With SIMOCRANE we provide “off the shelf” proven technology to secure reliable crane performance, simple engineering and fast commissioning. Besides all the proven crane control solutions in SIMOCRANE you still have the flexibility to customize the solution to meet your requirements.

SIMOCRANE Basic Technology is a system comprising hardware and software packages to automate cranes. This supports you in obtaining the maximum performance from your crane application. The basic technology covers motion control of all main drives such as hoisting gear, gantry, trolley gear, slewing gear, luffing gear, boom-hoist, holding and closing gear of a crane.

The new solution also includes the following features:

- All of the functions that have proven themselves in practice are also integrated in the new platform. The latest requirements have also been taken into consideration.
- New closed-loop control concept for synchronous operation and positioning with a position controller
- Capability of adapting to customer-specific requirements, i.e. a package that permits:
  - “Ready-to-Run” (the solution only has to be parameterized) as well as
  - “Ready-to-Apply” (can be adapted by the user)
- The SIMOTION D motion control system is the technological basis, not only for Basic Technology, but also for Add-on Technology.
Application area

The SIMOCRANE Basic Technology has a modular software design. The application solution can be flexibly used for various crane types. In areas including

- Harbor cranes
  - STS (Ship to Shore cranes)
  - RMG (Rail Mounted Gantry Crane)
  - GSU (Grab Ship Unload)
- High and medium performance industrial cranes with a specific crane technology
  - coil-crane
  - gantry crane
  - slipway cranes

Design of the axis group

Configuration of an axis group with SIMOTION D435 is designed as following:

- Several Sinamics DC master modules
- A SIMOTION D435 control unit, designed for the open-loop and closed-loop control of a multi-axis drive group
- A SIMOTION CX32 Controller Extension for more than 4 axes
- Several SINAMICS S120 Motor Modules (power units)
- Additional drive components such as
  - power supply
  - filter
  - reactor, etc.
- The connection between SIMOTION D435 and the SINAMICS S120 Motor Modules is realized using DRIVE-CLiQ, in a star-shaped topology in order to guarantee axis redundancy
- A CU320 control unit for the open-loop and closed-loop control of the infeeds connected in parallel (up to a maximum of 4 Line Modules)
- The infeed unit is separately controlled by a SIMATIC S7

SIMOCRANE Basic Technology software

The SIMOCRANE Basic Technology package provides not only the basic functionality of SIMOTION for motion control (e.g. positioning, synchronous operation etc.) and its standard libraries, but also the Crane Basic Technology package with two libraries. Beyond this, the package also includes several complete standard applications for different crane applications.

The use of SIMOCRANE Basic Technology offers the following advantages:

- Standard applications significantly reduce the engineering time ("Ready-to-Run")
- Simple adaptation and expansion to address specific customer requirements ("Ready-to-Apply")
- One platform for all crane technologies (various advanced crane technologies such as sway control are successively implemented based on SIMOCRANE Basic Technology)

As a consequence

- Interfaces will be reduced by using SIMOTION D
- Engineering and commissioning costs optimized
- Simple and easy through standardization

Contact us at cranes.i@siemens.com to receive further information how you can boost your productivity at highest safety standards.