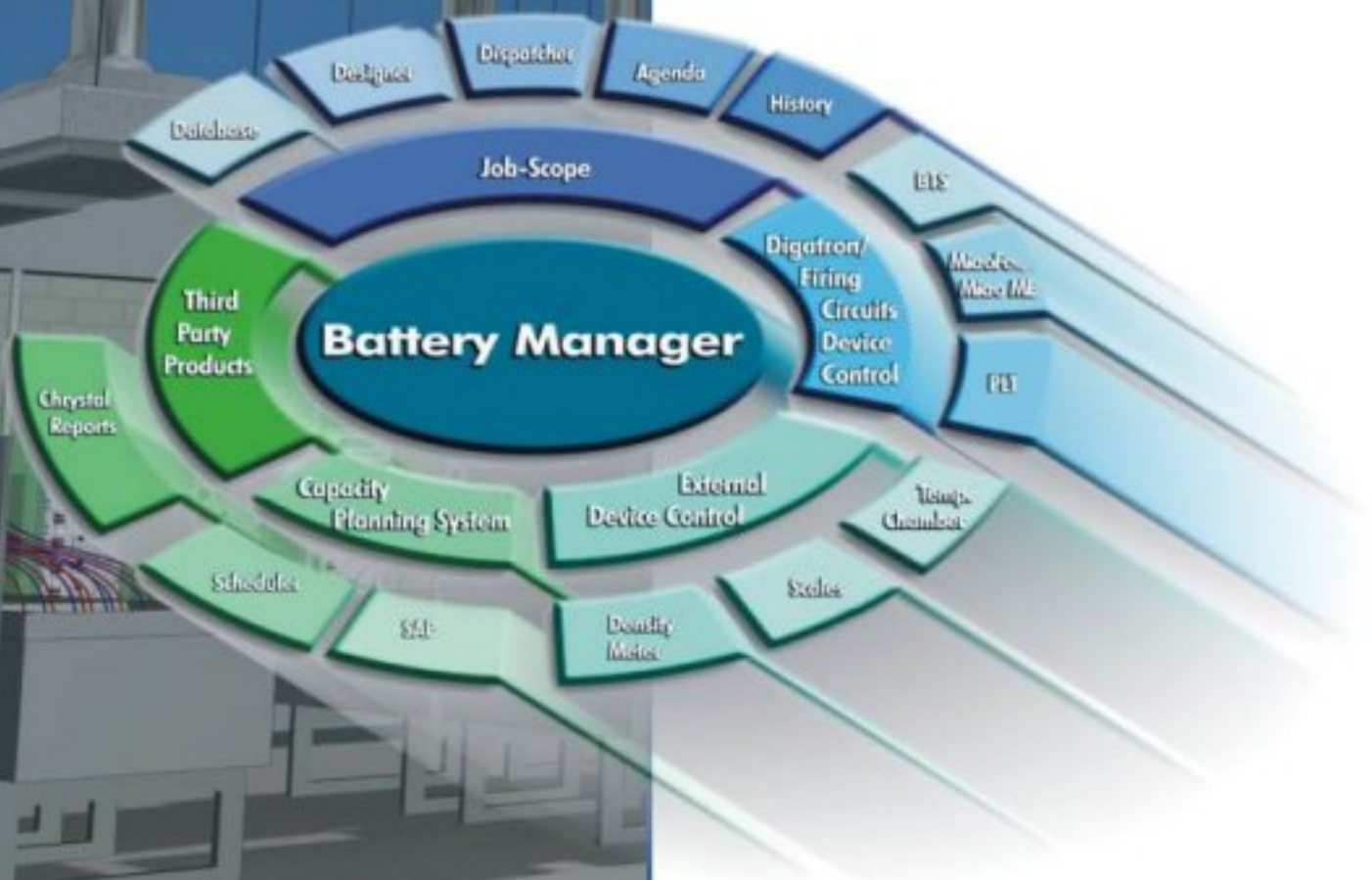


Battery Manager

- The All-In-One Software Solution for Battery Testing and Formation
- Process Efficiency through Integration



Battery Manager

The All-In-One Software Solution for Battery Testing and Formation

■ Battery Manager integrates...

all of the powerful features found in existing Digatron / Firing Circuits Battery Testing and Formation Systems such as BTS-600 (Battery Testing), Formation Supervisor III (Battery Formation), PLT (Production Line Testing).

■ Battery Manager connects...

all Digatron / Firing Circuits Devices as well as External Devices such as temperature chambers or scales to one common database. Each device is clearly defined in terms of required data and capacity to share these information with the Capacity Planning Module of Battery Manager.

■ Battery Manager reduces...

your in-process inventory using a software algorithm to optimize the utilization of test and formation process resources.

■ Battery Manager provides...

an easy to use operator interface where the Job number is the key to all related data generated either in the laboratory or formation processes. All relevant Job steps are generated and displayed clearly for each battery in test or formation. The complete range of Battery Managers visionary software modules are described hereafter.

■ Battery Manager operates...

with a Windows 2000 Network Server and SQL database server manager. The Customers Windows network can be used to operate Battery Manager from any workstation within the network. Remote Control of all equipment connected to the network is also possible via Internet access.

■ Take Advantage of ...

the knowledge and experience of the battery experts who were significant participants in the development of Battery Manager. See the benefits of a revolutionary approach to battery testing and formation software developed by a worldwide company with over 30 year's experience in the battery industry.



Battery Manager

Process Efficiency through Integration

■ Job-Scope

A database-oriented and Job-related software platform for Testing and Formation including software modules: Database, Designer, Dispatcher, Agenda and History.

■ Digatron / Firing Circuits Device Control

BTS-500, BTS-600, MicroForm 2000, MicroForm 9000, SBMF, Micro ME, PLT

■ External Device Control

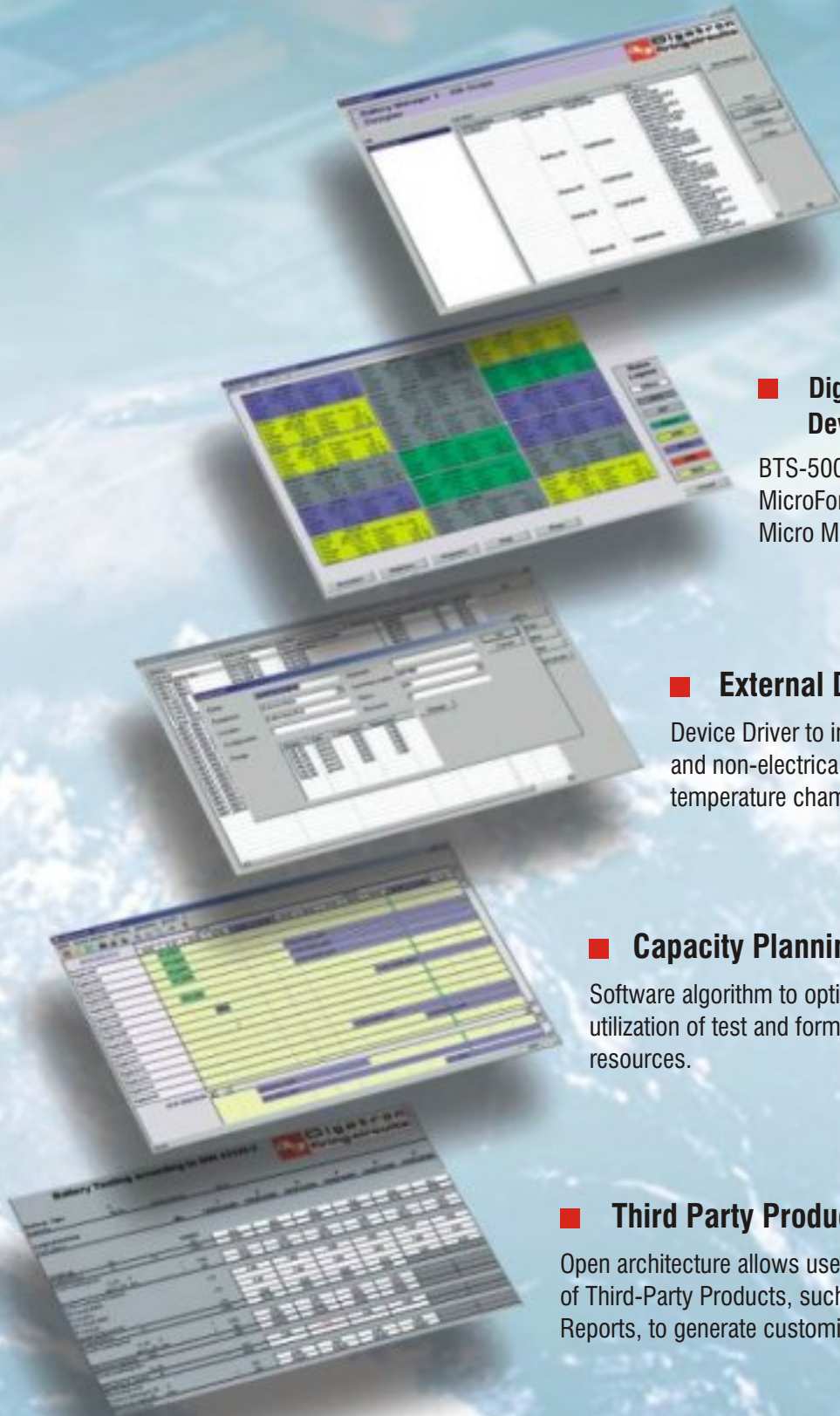
Device Driver to integrate external electrical and non-electrical equipment such as temperature chambers and scales.

■ Capacity Planning System

Software algorithm to optimize the utilization of test and formation process resources.

■ Third Party Products

Open architecture allows use of a variety of Third-Party Products, such as Crystal Reports, to generate customized reports.



■ Data Base

- SQL database for batteries, test specifications, formation schedules and equipment.
- Battery data may be used for test and formation program parametrization. Links to further data tables provide manufacturer or supplier component lists such as electrodes or containers.
- Test specifications consist of test standards and test programs. Test standards determine the number of batteries to be tested and tests to be performed. Test programs are downloaded to electrical test devices and are used to verify the electrical performance of a battery.



- Formation schedules consist of generic formation data and formation programs. Typical generic formation data include formation layout, battery cooling method and the number of batteries per string. This information is shared with the Capacity Planning Module. Formation programs are downloaded to the charging/discharging equipment for the initial charge of battery strings or single batteries.
- The equipment data table includes information about laboratory and formation area equipment inventory. Generic properties, electrical data and available process capacity per unit are listed in detail.

■ Job-Scope Designer

- Operator interface to enter new Job data for laboratories or formation areas.
- A strictly Job number related system. The Job number is the key to all related data generated either in laboratory or formation processes.



- All relevant Job steps are generated and displayed clearly for each battery in test or formation.

■ Job-Scope Dispatcher

- Operator interface to attribute test steps to test equipment.
- Displays only the test equipment that can perform the highlighted test step.



- Attribution is made by a simple double click
- Indicates the time each unit is occupied in test to manage for maximum utilization of available test equipment resources.



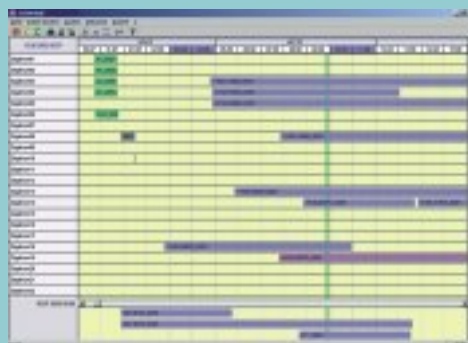
■ Third Party Products

- Open architecture allows for use of a variety of Third Party Products such as Crystal Reports to generate customized reports.



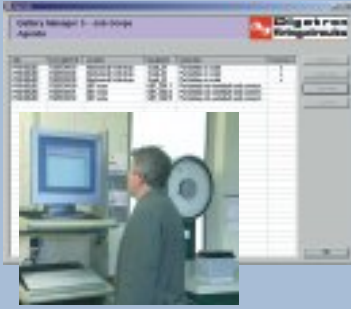
■ Capacity Planning System

- Software algorithm to optimize the efficiency of test and formation schedules considering process requirements and the proximity of equipment to the product to be processed.
- Clear graphical display of in-process and scheduled Jobs on a freely-scalable time axis.
- Interface to receive and transmit relevant Job data from other Job management systems such as SAP.



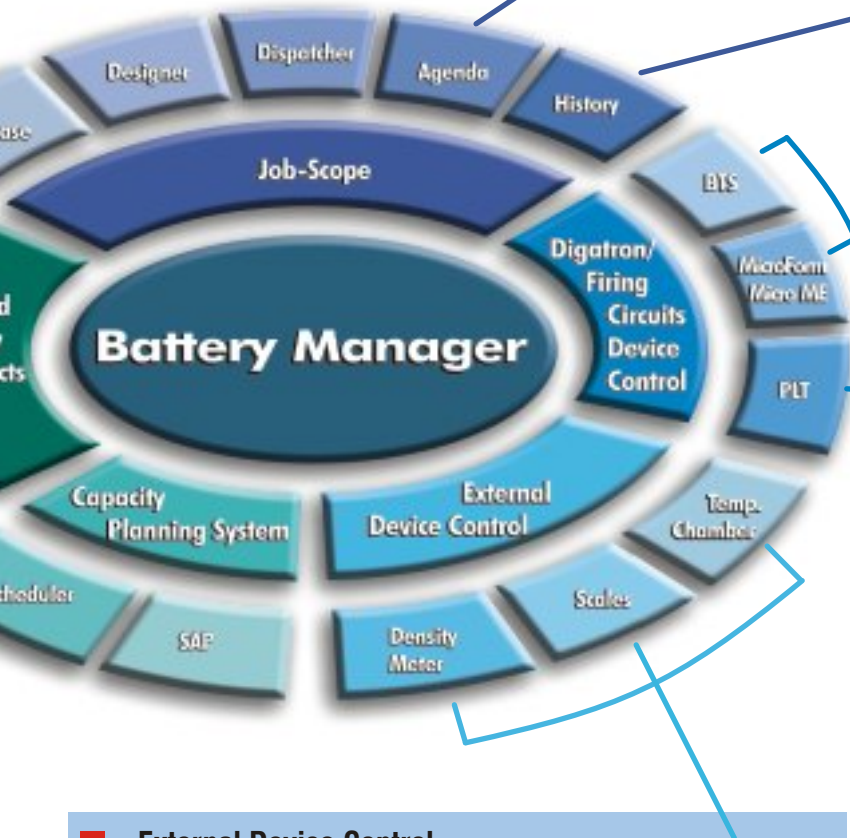
Job-Scope Agenda

- Operator interface showing the Job Agenda with detailed instructions for each test or formation step.
- Operators mark the test or formation steps they will perform next and are then presented with instructions detailing the set-up and preparations required.
- Download of test and formation programs to electrical devices are initiated and processes started after operator confirmation.
- Windows to enter manually collected data will appear when completing non-electrical tests such as weighing or acid density measurement.



Job-Scope History

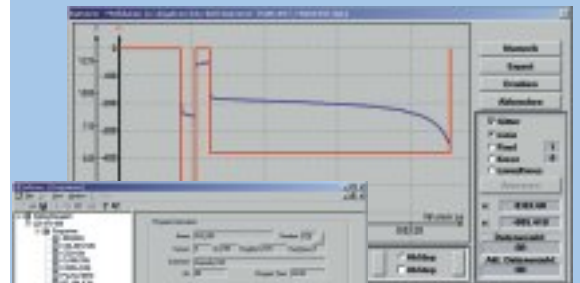
- Provides continually updated status of steps completed and steps to be completed.
- Historical data is available for all Jobs entered and released in Job-Scope.
- Any failure during test is clearly identified in the History screen by indication of a pass or fail result.
- Data files can be displayed in graphical or numerical form by a simple double click on any of the completed steps.



Digatron / Firing Circuits Device Control

BTS-500, BTS-600, MicroForm 2000, MicroForm 9000, SBMF, Micro ME, PLT

- One common operator interface for Digatron / Firing Circuits complete product range.
- Multi-Tasking, Multi-User and Remote Control Operation are supported for all devices connected to Battery Manager.
- Existing host computer can be converted to Digatron / Firing Circuits system server to adapt to Battery Manager.



External Device Control

- Software platform to integrate device drivers which communicate with temperature chambers, water baths, data-logging systems or PLC's.
- Stores manually collected data such as weight and acid densities in the database.
- Standard interfaces are IEEE, RS232, RS485, SMB-Bus, CAN-Bus and TCP/IP.
- Others on request.

