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HONEYWELL ENERGY MANAGER
R600 Guide Specification

Version 1

The following describes the end-to-end functions of an Honeywell Energy Manager including the tools required to effectively manage a facility or enterprise wide energy optimization program. This includes but not limited to meters, reports, analytical tools, operational tools and automation.

Contents*:*

1.1 PART 1 – GENERAL

A This specification describes the required functions for an effective Honeywell Energy Manager

1.2 HONEYWELL ENERGY MANAGER REQUIREMENTS

A Honeywell Energy Manager IS a fully integrated software tool that provides data acquisition, management and prediction of energy use. It provides the tools necessary to analyze demand and consumption and it supports the development of strategies to optimize facility energy performance.

B The collection and calculation of data is based on internal system sources (BMS connected meters, temperature sensors, etc.) and also from external sources (weather forecast data from the Internet, building floor area, time of use information, tariffs, etc.). The data is assigned to configured objects (buildings, tenants, equipment) of a customized facility model.

C The display and evaluation of the measured and calculated data uses standard Microsoft applications (SQL Server Web Server, EXCEL), reports are individually configurable. Honeywell Energy Manager analysis tools provide for editing and filtering of collected data so that the user can easily:

1 Identify and reduce peak demands to avoid unnecessary cost

2 Identify the highest energy consuming facility parts and to start optimization

3 Compare profitability of different energy supply sources e.g. CHP

4 Simulate cost calculations based on demand profiles to optimize tariff structures

D The Honeywell Energy Manager consists of the following components:

1 Modeling of the energy system, data validation, data trending, reporting in graphical and numerical form, baseline management, alarm management, meter hardware management, tenant billing / cost allocation, power demand management, load forecast and supply optimization in dependence on weather and load forecast.

1.3 HONEYWELL ENERGY MANAGER PLATFORM

1 Honeywell Energy Manager provides functions described in this section.

2 Integrates with the Building Management System (BMS) (EBI) to capture required energy and consumption related measurement data. All instruments and submeters can be connected to the BMS and the data is transferred to Honeywell Energy Manager on a real-time basis. Honeywell Energy Manager recognizes the variable names, (point names) of the BMS. (EBI)

3 Honeywell Energy Manager reside on its own separate and dedicated server.

4 The server and software must be sized to support the number of meters specified.

A. Hardware

a. (Dell PC) server size based on number of meters connected to Honeywell Energy Manager

B. Standard system supports

a. Minimum Processor – Intel Xeon Quad-Core 1.8GHz (E5-2403 v2 or equivalent)
b. 8 GB RAM or more
c. 150 GB Disk or more
d. DVD Drive

C. Server Software Requirements

a. Windows Server 2016 R2 Server
b. Microsoft SQL Server 2017
c. *Microsoft Internet Explorer 11*

D. Station Software Requirements

a. Windows 10 Professional 64 bit

Honeywell Energy Manager software application supports data acquisition, compilation, reporting, tenant billing, active demand management, and energy related alarming via the BMS, and automated demand response.

1.4 HONEYWELL ENERGY MANAGER SOFTWARE FUNCTIONS

A General: Honeywell Energy Manager supports multiple functions which include:

1 Data Acquisition with robust conditioning to eliminate the effects of spurious data

2 Real-time tools to support demand response for load management

3 Demand forecasting integrated with weather prediction and based on historic response.

4 A suite of reporting tools to support standard reporting and critical analysis

5 Cost management tools to support the daily business of building management

6 Tools to support expanding sustainability initiatives

7 Regression Modeling

8 HVAC Analysis

B Data Conditioning & Collection

1 Data captured is filtered to eliminate the affects of spikes and voids on the composite calculations. Data is conditioned before insertion into the Honeywell Energy Manager database.

2 Retrieval, Validation, cleaning, and alarming of the meter data is accomplished on a user defined interval. 15-minute data capture is recommended for long term storage and analysis reporting.

3 Honeywell Energy Manager software provides an Interpolation Algorithm that estimates interval consumption by performing a linear interpolation between the valid

data on either side of the period being estimated. Where the accumulated consumption of the intervals being estimated has not been marked as invalid, the interpolation is performed using the valid accumulated consumption values. Where the accumulated consumption of the intervals being estimated has been marked as invalid, the interpolation is performed between the valid interval consumption values.

4 Heating and Cooling Degree Days are to be calculated based on local temperature measurements. Default is 65 degrees which can be modified to meet unique needs.

5 For reporting all data is normalized based on floor area, degree days, or time-based parameters.

6 Baseline data is assignable to trends for baseline studies.

7 There is no software limit to historical data kept on-line. The only limitation is the physical storage available on the hard drive or data storage device of the PC Server.

8 Alarms for missing, invalid or unexpected meter data is displayed through PC stations, printers, mobile phones, pager, fax or email. Alarms are archived, user defined alarm protocols are definable, displayed, and printed.

9 Data is exchangeable with other applications using standard interfaces (e.g. ODBC) or text files

C Honeywell Energy Manager interfaces to the following Data sources via the BMS:

1 General Utility meters supplied by utility companies.

2 Submeters

3 Internet weather forecast data for predictive demand management.

A. Honeywell Energy Manager leverages a subscription service which provides near real time data updated twice daily Weather data includes but not limited to temperature, humidity, dew point, wind speed and direction, cloud cover, 3-day historical and 15 day forecasted.

B. As an alternative, local sources can be used for weather data. This would not support predictive algorithms. (Outside air and humidity can be captured from most HVAC systems.)

D Data Modeling

1 Data modeling provides the hierarchical structure under which data is collected for eventual retrieval. Ample modeling objects are provided to support reporting, tenant billing, energy consumption, and demand analysis.

2 Enterprise Modeling

A. Energy Data Modeling is configured to permit the association of measurement data with meters, locations, buildings, equipment of various types, chillers, generators, lighting, boilers, organizations, tenants, etc.

B. Meter information includes Point names and parameters from which Honeywell Energy Manager accesses the BMS data.

a. If no direct metering is available, then the software provides for the creation of a virtual meter based on square footage or m^3 of other calculated parameter. Sums, differences, or other mathematical formulas are used against another measurement.

C. Pertinent information is to be included in the modeling of objects. This includes square footage or m^3, equipment KW ratings, minimal on and off times, and other information that can be used for analysis.

a. Unique Icons are provided for the easy identification of these data types.

b. Object names can be up to 32 characters

D. A “Synchronization” object is provided to synchronize the electric power meter data collection with the servicing utility company’s clocking system. The “Sync Pulse” object defaults to 15-minute intervals that aligns with the primary meter for the site and the serving electrical utility company.

E. Data modeling configuration is provided as the basis for reporting.

3 Circuit Modeling (Used primarily for Demand Management/Load Shedding)

A. Circuit Data Modeling is configured to group same energy types into groups. This model will permit energy demand and consumption analysis and reporting based energy type.

B. Meter information includes Point names and parameters from which Honeywell Energy Manager accesses the BMS data.

a. Unique Icons are provided for the easy identification of these data types.

E Tariffs & Rate Structures

1 The Honeywell Energy Manager rates engine tool is provided to define tariff and rate structures and configure billing calculations.

2 The rates engine contains two trees for defining and allocating costs:

A. Tariffs and Charges

B. Tenants and Billing

3 Three primary rate types are supported

A. Basic Charge •

a. Fixed cost per billing period (e.g. $/month)

b. Fixed cost per day (e.g. cents/day)

B. Consumption Charge •

a. Flat-rate cost per unit consumption

b. Tiered and block rates

c. Time-of-use dependant rates

d. Excess and rebate charges

C. Demand Charge • Flat rate per unit billing demand

a. A variety of billing demand calculations (see below) are supported (e.g. peak demand in current billing period)

(a) Tiered and block rates

(b) Excess and rebate charges

(c) Time-of-use dependent rates: Seasonal rates.

D. Demand Billing Tariffs

a. The rates engine tool supports the following basic demand calculations

(a) Peak interval demand over billing period

i. Highest interval demand over the billing period

(b) Peak one-hour interval demand over billing period

i. Highest average hourly demand for the billing period.

(c) Peak one-month interval demand over billing period

i. Highest average demand for any month within the billing period.

(d) Peak interval demand over previous 12-month period

i. Highest interval demand over the previous 12-months.

(e) Peak one day interval demand over billing period

i. Highest average demand daily demand over all calendar days in the billing period. Useful for gas tariffs

4 These rate structures are applicable concurrently to different tenants on different meters.

5 Tariffs used by the serving utility are duplicated using the rates engine tool.

6 The rates engine tool supports validation of utility generated billing.

E. Data storage

a. Data is stored on standard data storage devices such as hard drives and storage arrays for real-time retrieval.

F. HONEYWELL ENERGY MANAGER REPORTING

a. Three (3) reporting tools are provided:

i. Web compatible pre-configured reports (Honeywell Energy Manager Web Based Reports)

ii. Microsoft Excel Pivot Table fully configurable reports

iii. Tenant Billing and Cost Reports

b. Honeywell Energy Manager Web Reporting

i. A library of preconfigured reports services the facility management's need to understand energy consumption and other parameters. These reports require only the minimum of user expertise to select, retrieve, view, print, archive, and email.

ii. Reports are viewed from Microsoft's Internet Explorer Browser via a URL. No downloads are required to support this report application.

iii. The report window offers pull down menus and require no command scripts to operate.

iv. Administration rights are managed by the Honeywell Energy Manager server.

v. Reports included but not limited to:

1. Cost Scenario Comparison

a. Detailed comparison of two Tenant cost configurations

2. Demand Distribution

a. Pareto style chart showing frequency (or percentage of total time) of demand readings for nominated meter and time-period.

3. Demand Calendar

a. Daily demand profile superimposed on a calendar view.

b. Shading included showing nominated time-of-use periods.

c. Optional weather temperature trend.

d. Daily peaks and times are noted

4. Facility Comparison

a. Compare and rank energy consumption for a range of facilities. Analyze by occupancy, operating schedule, class of construction or other user-defined locality attributes.

b. Optional normalization of results by weather and/or floor area

5. Facility Energy Review

a. Description and comparison of MBtu and Meter units current period vs. previous period

b. Energy use intensity per ft2

6. Facility Energy Signature
    a. Demand –vs- CDD, Demand –vs- HDD for individual building/plant. Selectable time range (e.g. last year, Jan-2005 etc).
    b. Option to break up results by occupancy definition – e.g. show demand –vs- HDD for normal working –vs- holiday periods.
    c. Demand –vs- temperature bin.
    d. Selectable meter/fuel types (one, several or all). Where multiple meter types are involved (e.g. electric and gas), results are expressed in energy units.
7. Plant Overview Report
    a. Provides an overview of information relevant to facilities such as central plants.
    b. Relative run hours
    c. Run hour distribution
    d. Equipment efficiency trends (heating/cooling efficiency)
    e. Critical process readings – e.g. temperature, pressure
8. Meter History/Profile
    a. Consumption, demand, peak demand, load factor, GHG (Green House Gas) emissions, power quality parameters for one or more meters. Automatically report total energy consumption across different meter types. Selectable level of detail (e.g. yearly, monthly, daily, hour, interval aggregation). Selectable time range (relative and absolute). Compare actual –vs. – baseline –vs. – forecast
9. Energy Forecast/Consumption
    a. Raw energy forecast for next 40 days for nominated meter
    b. User selectable time range. Where time range is “This month”, Corrected forecast is provided. Corrected forecast is actual to date for period + forecast for balance of period).
10. Name Invoice Overview/Summary
    a. For bulk invoice sensibility checking. Show all invoices for nominated period. Comparison of invoice total for corresponding period last year. Highlight suspect invoices. Compare invoice total to utility bill where available.
11. Name Invoice History/Tenant Billing History
    a. Show history of invoiced amount for each meter type for a nominated tenant
12. Tenant invoice

a. Shows detailed charges for a particular tenant/billing period/meter type. Can be customized

13. Invoice Validation

a. Compare calculated invoice with charges from utility. Highlight significant differences.

14. Meter Configuration

a. Meter type, location, consumption value

b. If available provides meter roll-over values

c. EXCEL PIVOT TABLE REPORTS

i. Excel reports are fully configurable to interrogate the Microsoft SQL database created by the Honeywell Energy Manager software.

ii. Standard measures and data files are used to create spreadsheets and charts to support the ongoing effort to understand and evaluate energy related systems.

1. “Measures” are used to partition the data categorically to reveal trends and deviations that will identify opportunities for continual improvement.

2. “Measures” are defined by the Honeywell Energy Manager modeling of the “Enterprise Tree” and “Circuit Tree.”

3. Data “Dimensions” are created by the Honeywell Energy Manager. These files include raw data and conditioned data. The data is associated with localities, tenants, equipment, organizations, etc. each data point is also time and date stamped.

iii. Honeywell Energy Manager Pivot Table reporting tool include the following MEASURES:

1. Apparent power - Apparent power data collected as end-of-interval snapshots
    a. Average consumption per day Average consumption per (full or part) calendar day
2. Average consumption per month
    a. Average consumption per (full or part) calendar month.
3. Average dew point
    a. Average dew point temperature
4. Average humidity
5. Average temperature
    a. Average (weather) temperature
6. CH4 Methane
    a. greenhouse gas emissions
7. CH4/floor area Methane
    a. greenhouse gas emissions normalized by floor area
8. CO2
    a. Carbon dioxide greenhouse gas emissions
9. CO2 (equiv)
    a. Equivalent Carbon dioxide greenhouse gas emissions
10. CO2 (equiv)/floor area
    a. Equivalent Carbon Dioxide greenhouse gas emissions normalized by floor area
11. CO2/floor area
    a. Carbon dioxide greenhouse gas emissions normalized by floor area
12. Consumption
    a. Total consumption. Units depend on the meter type (for example, kWh for Electrical meters or mcf for gas

meters). Consumption readings can be converted to other units (including energy units) using the it of Measure dimension

13. Consumption/floor area
    a. Consumption normalized by floor area. See the Floor area measure for information on how Floor area is calculated. No result is returned if the floor area is not defined.
14. Cooling degree days
    a. Total cooling degree days. The default degree days balance point is 65°F/18°C.
15. Cost
    a. Total cost
16. Cost/floor area
    a. Cost normalized by floor area. See the Floor area measure for information on how Floor area is calculated. No result is returned if the floor area is not defined.
17. Demand
    a. Average rate of consumption (for example, kW for Electrical meters or gallons per minute for water).
18. Efficiency
    a. Ratio of energy output to energy input. This measure can be used with generators, chillers and boilers which output energy and consume fuel. It can also be used to calculate the efficiency of Localities that represent Central Plants.
19. Energy efficiency index
    a. Ration of energy consumption for current period to previous corresponding period normalized by degree days.
20. Floor area
    a. Floor area of the locality relevant to the current result. If the Locality dimension is used in the report, floor area is taken from the locality that applies to the result. Otherwise the floor area that has been assigned to the default locality, “My Energy System” is used.
21. Heating degree days
    a. Total heating degree days. The default degree days balance point is 65°F/18°C.
22. Maximum daily temperature
23. Minimum daily temperature
24. N2O
    a. Nitrous oxide greenhouse gas emissions
25. N2O/floor area
    a. Nitrous oxide greenhouse gas emissions normalized by floor area
26. Peak daily consumption
    a. Highest consumption of any individual calendar day.

27. Peak demand
    a. Highest average demand of any demand interval
    b. Note: The Meter dimension must be used with this measure. Peak demand is only calculated for individual meters.
28. Peak hourly consumption
    a. Highest consumption of any individual hour
29. Peak monthly consumption
    a. Highest consumption of any (full or part) calendar month
30. Peak yearly consumption
    a. Highest consumption of any (full or part) calendar year
31. Power Factor
    a. Average power factor
32. Reactive Power
    a. Average reactive power
33. Run hours
    a. Total equipment run hours

iv. Honeywell Energy Manager Pivot Table reporting tool includes the following DIMENSIONS

1. Actual Baseline Forecast
    a. Allows side-by-side comparison of Actual, baseline and forecast data.
    b. Actual – baseline = difference between actual and baseline
    c. This dimension does not include all levels. It defaults to Clean (Actual).
2. Cooling degree days
    a. Cooling degree days in 10-degree bins. The degree day balance point can be configured for each weather station.
3. Day type
    a. Provides a breakup by type of day (weekday, weekend) and the actual day of the week.
4. Equipment
    a. List of all Equipment, including “unmetered” equipment items which are automatically generated by Honeywell Energy Manager to account for un-modeled loads in the system.
5. Equipment type
    a. List of Equipment types
    b. This list can be modified by the user in Energy Builder Modeling tool.
6. Fiscal Year 1
    a. 12 months from the end of June to the end of June.
7. The fiscal year start month is adjustable.
8. Generated or Consumed

a. Allows generated quantities (for example, electrical generator output) to be separated from consumed quantities (loads).

9. Heating degree days
    a. Heating degree days in 10-degree bins.
    b. The degree day balance point can be configured for each weather station.
10. Locality
    a. Hierarchy of localities, as defined in Energy Builder modeling tool. The default locality “My Energy System”.
11. Locality type
    a. List of locality types, as defined in Energy Builder modeling tool.
    b. Note: only bottom level localities have totals reported against them
12. Meter
    a. Flat list of meters.
13. Meter type
    a. List of meter types.
    b. Note: This dimension will default to Electrical
14. Month
    a. Allow comparison of results month to month, independent of year.
15. Season
    a. A list of all seasons defined in Rate Builder which have been selected for use in analysis reports.
16. Time
    a. Time hierarchy, with levels of Year, Month, Day, Hour and Minute.
    b. Hour and Minute readings are time-stamped at the end of the interval.
17. Time of day
    a. Hour of the day
18. Time range
    a. A selection of relative time ranges including Last 30 days, Last 7 days, and this month.
19. Unit of measure
    a. List of all available Units of Measure defined in Honeywell Energy Manager .
20. Unit set
    a. List of all defined Unit Sets.
21. Weather Station
    a. List of all configured Weather Stations.
22. Weather temperature
    a. Weather temperature in 1 oF, 5 oF, and 10 oF “bins”

b. The dimension has a default range of - 50 to +120 oF. Readings that fall out of this range are reported as “Out of range”. This range can be modified in the Weather Station properties.

23. Year
    a. List of Calendar years.
24. User Defined Dimensions
    a. These are dimensions that are based on User Defined Properties, for example, Building Construction Type.
25. Time of use Dimensions
    a. These are dimensions based on time of use definitions in Rate Builder which have been selected for use in analysis reports.
26. Holiday Dimensions
    a. Dimensions based on holiday definitions in Rate Builder which have been selected for use in analysis reports

v. TENANT BILLING

1. Honeywell Energy Manager provides a means to create Tenant Billing for energy and consumption. The system allows for customization of the billing format.
2. Tenant Billing supported includes
    a. Tenant Information, Name, address account number, etc.
    b. Multiple Energy units.
    c. Graphic representations of consumption and demand.
    d. Calculation details (where appropriate)
    e. Billing Summary
3. Tenants are assignable to one or more Localities. A provision can be added to permit a single tenant to appear multiple times within Honeywell Energy Manager, i.e., multiple tenancy is supported.
4. Bills permit allocation of costs to individual tenants. They are associated with Tenants.
5. Meters provide the means to collect and store data in the Honeywell Energy Manager database. For billing purposes, meters are assigned to Tenants.
6. If a meter does not exist for the subject consumable, Virtual Meters can be used where possible. Virtual Meters can calculate based on the values of other meters. For example, Virtual meters may be used to allocate building electricity consumption between several tenants.
7. Honeywell Energy Manager supports the following energy and consumables by default. This is as sampling of the total. Creation of specialized consumable is permitted. A unique icon is assigned to each type for easy recognition.
    a. Electrical

b. Gas
c. Water
d. Fuel Oil
e. Steam
f. Super-Heated Steam
g. Sewage
h. Chilled Water
i. Heated Water
j. Propane
k. Heavy Oil

G.HONEYWELL ENERGY MANAGER DEMAND FORECASTING

a. General: The Honeywell Energy Manager Demand Forecasting (Advanced Energy Modeling) tool is offered as a licensable option to the Honeywell Energy Manager “Foundation”. Advanced Energy Modeling provides forecasts of facility energy performance up to 45 days into the future. It includes a re-forecasting tool to allow adjustments to daily strategies to mitigate demand issues.

b. The demand forecast module integrates with Honeywell Energy Manager to predict the detailed demand for different utilities for the next 72 hours and an estimate for 45 days into the future. The forecast is based on historical demand and weather data, calendar data and weather forecast data.

c. The following functions and elements are included as part of this module:

i. A detailed hourly based demand forecast to plan the demand management for the next 72 hours. The data will be graphically and numerically shown. The actual and forecast data can be displayed in one trend graph to visualize the quality of the forecast compared to the actual.

ii. The weather forecast data is automatically downloaded from an ftp server of a weather provider. The data is imported into the database and forecasts are updated each time the forecasted values are renewed, at least every 12 hours. This weather forecast download does require a contract with our weather provider.

H. HONEYWELL ENERGY MANAGER DEMAND MANAGEMENT

a. General: An Automated Load Management software module is to be made available as a licensable option for integration with Honeywell Energy Manager. Real time meter measurement data is utilized to predict the likelihood of reaching a preset demand threshold. Alarms as well as automatic actions (shed strategies) are initiated to offset the likelihood of reaching the preset demand threshold.

b. The BMS based power demand / load shedding module is built on Honeywell Energy Manager Foundation to centrally manage site demand and generation of different utilities (e.g. electricity or gas) to optimize the supply cost based on contractual tariff definitions.

c. The following functions and elements are part of this module:

i. Automated load management according to predefined parameters (power, priority, min run time, min shed time, max shed time) and selected algorithms.

1. If several loads have the same priority, a selection algorithm is used to decide which load within that priority level to shed or add. Two algorithms are available in Enterprise Demand Management to do this:

a. Circular:

b. Sequential:

ii. Demand/Load Management can automatically shed loads or turn on generators, turbines or CHPs to reduce peak demands. Other setbacks such as room temperature set points can be programmed through the Building Management System.

iii. A graphical display of the actual demand status compared to the contractual limit in the actual interval.

iv. An overview list of defined loads and generators with main parameters and current status including a direct option for manual override

I. SUBMETERING

a. General

i. In addition to standard utility meters, Honeywell Energy Manager integrates with sub meters to provide real time measurement of consumption in the appropriate units.

ii. Where appropriate consumption and demand data is captured from other devices or controllers that can provide accurate data. For example, CFM can be provided by air flow meters via HVAC controls.

iii. Integration of 3rd party sub-metering hardware is common and acceptable

iv. Submeters are to be supplied with BACnet, BACnet/IP, Modbus, Modbus, or LON interface hardware and software.

v. Submeters are to be prequalified to communicate with the Building Management system and/or Honeywell Energy Manager. Meter data is read with a time resolution of 5 seconds and available for historization at an interval of one minute or less. (By default)

vi. Submeters are to be powered by standard electrical power of 115 VAC. Wattage requirements are provided.

b. Submeter data and Submeter types

i. Electricity

1. Units
2. Accuracy Requirements
3. Parameters

ii. Gas

1. Units
2. Accuracy Requirements
3. Parameters

iii. Steam

1. Units
2. Accuracy Requirements
3. Parameters

iv. Condensed Water

1. Units
2. Accuracy Requirements
3. Parameters

v. Hot water

1. Units
2. Accuracy Requirements
3. Parameters

vi. Chilled Water

1. Units
2. Accuracy Requirements
3. Parameters

vii. Air flow: CFM

1. Units
2. Accuracy Requirements
3. Parameters

J. HONEYWELL ENERGY MANAGER TRAINING & ONGOING SUPPORT

a. Training and support is made available

b. Formal scheduled courses for engineering-oriented training is available

c. The vendor either at vendor's premises or on site should provide standard training on all aspects of the system.

i. Configuration Services

Honeywell Training supplies all necessary configuration services if required including controller configuration, database configuration, etc.

2 Installation Services

Honeywell Training provides installation services for the system including validation services if necessary.

3 Hardware Maintenance

Honeywell Training provides hardware maintenance and spare parts support if required.

4 Software Enhancement & Software Support

Honeywell Training provides a comprehensive software maintenance and enhancement program for on-going support of the system. This includes:

- Qualification of all Windows hotfixes and updates on a monthly cycle
- Delivery of qualified and supported Windows hotfixes through an automated tool
- Qualification of all cumulative updates and patches for the IBMS software
- Delivery of these qualified IBMS updates through an automated tool

2.0 SERVICES

Honeywell Training provides supporting services as detailed in the following sections.

A Requirements

Honeywell is a recognized leader in Facilities Integration, Security Management, Life Safety Management, Energy Management and Building Automation Systems capable of supplying all necessary support services including hardware and software support, configuration services, system installation and commissioning and on-going support.

3.0 QUALITY ASSURANCE

The IBMS software supplied, as part of this system is developed in an ISO 9001 compliant environment.