## The functional target

Allows :

- The preparation and planning of the monitoring
- Parameter readings during operation
- A real-time analysis of the discrepancies identified in the field (first and second level)
- The conservation, without time limitations, of the reading history
- The reproduction and circulation, in various ways, of information (tables, graphs, drawings)
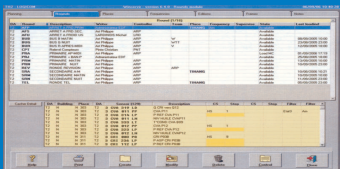
The gathering requires :

- The uploading of the round data to a handheld mobile computer
- The gathering and first level monitoring of information in the field
- The downloading of the reading values
- The treatment of the values (second level monitoring) and their historization
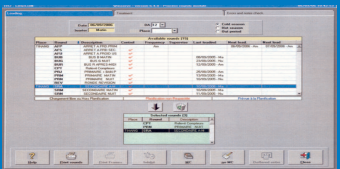
The analysis allows, for all :

- All the reading values to be consulted (tables, graphs, drawings)
- The comparison of the values with each other
- Historical rounds to be consulted
- The discrepancies and observations to be consulted
- Summaries to be consulted
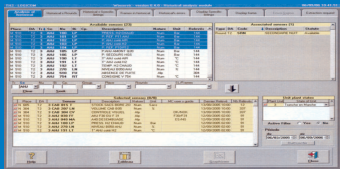
The preparation of reading rounds
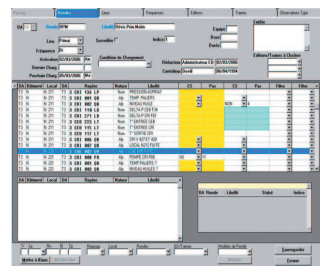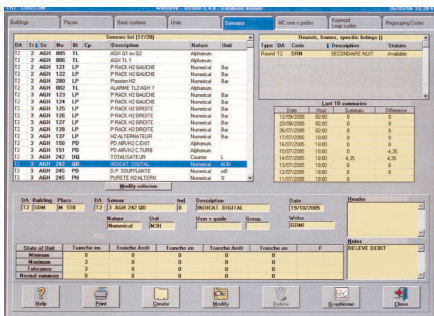
The gathering of readings

PRINCIPLES

Management of reading points :

A point usually involves an item of equipment :

- The equipment :
  > an item of equipment is unique and is identified by a structured code
- Location of equipment :
  > access domain, building, location
- Data entry guidelines :
  > help with data entry by proposing a predetermined selection of possible responses suitable for each item of equipment

Example :   OPEN/CLOSED   EMPTY/FULL   ON/OFF

Standard round management :

- Standard round : programmed sequence of a set of functional readings
- Planning frequency of standard rounds
- Planning frequency of each item of equipment
  Example : readings to be taken every Monday, every night shift, once a month, during "extreme cold" periods, only during production at 100 %, etc...
- Round optimization : certain readings are not carried out systematically :
  Example : if a pump is stopped, "skip" the following 5 readings.
- Updating of various editions : summary table gathering the reading values :
  Example : counter readings, filter summary, etc...
- Updating of "drawings" : Excel sheet containing functional references, an equipment synopsys which will be updated automatically on the next round with the gathered values.

COURSE OF THE ROUND

The operator selects the round to be carried out. Planned rounds are proposed as priority, etc...

- Selection of the reading support : the Portable Data Entry Terminal or paper
- According to the production status, the tolerance thresholds, minimum, maximum, and expected values for each of the reading points are updated to the terminal
- Gathering of values and monitoring of discrepancies in regard to fixed thresholds
  minimum, maximum, tolerance, constant regression and progression, value different from the normal expected value, etc...
- Notes regarding the readings with special observations
- Downloading of the values entered at the workplace at the end of the round
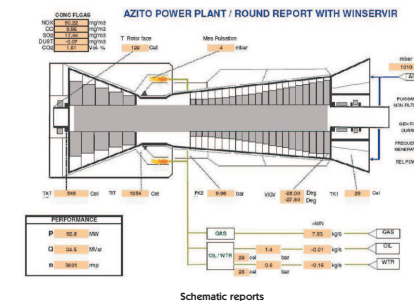- Monitoring and analysis of the values, printing of a report
- Final recording

The analysis
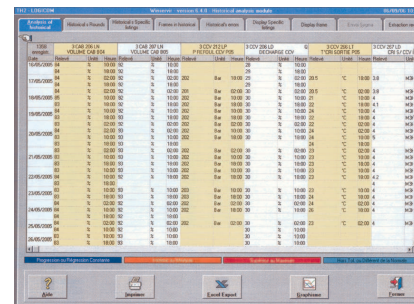
Table

Drawing

Schematic reports

History consultation

- Complete access to the history as well as timing and dating of the readings (1 minute resolution)
- Display of abnomalities in different colours discrepancies with regard to the thresholds...
- Comparison of the simultaneous evolution of various readings :
  Example : comparison of the evolution flow, the state of a filter, or the position of a value
- Tools : tables, export values to Excel format, direct access to graphic tools (see below), use of a "SEARCH TOOL" to seek the values according to various criteria

Access to the graph function
Purpose : Comparison of the evolution of different readings over a period of time

- Raw curve : drawing of a straight line between readings, either numerical or alphanumerical,
- Smoothed curve : drawing of a curve representing the average between the readings, with a modifiable smoothing coefficient,
- Tendency curve over the entire period displayed and projection of the tendency beyond the last reading,
- Point cloud curve : display of the readings only,
- Extrapolation of points where no readings were taken,
- Superposition of graphs,
- Graphs displayed at the same scale,
- Automatic scale calculation and display,
- Display of discrepancies between two readings, the state of the production until at the time when the reading is taken,
- Horizontal and vertical zoom,
- Notes.

Various editions, reports, summary editions

- Insertion of equipment in the various editions
  Example : state of the counters, state of the filters, tub level, etc..
- Edition of historical reports and discrepancies between readings
- Export to Excel format
  Example : transfer to GMAO, SAP, P.I., etc ...
- Viewing of time of push button counters before updating the preventive maintenance system
- Updating of "drawings" models : Excel sheets, where certain cells are linked to database functional references
  Example : a synopsis where the Excel cells are updated automatically on the next round with the gathered values.

WINSERVIR® : access and password management

- Adaptability of the software to the various user profiles
- Consultants - round staff - round administrators - site administrators...
- Software developed according to ISO 9001 norms