

## **OPTEX Mathematical Modeling System**

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**OPTEX Mathematical Modeling System**, software oriented to the design, implementation and start up of Decision Support Systems (**DSS**) based on large scale optimization models, through the integration of optimization technologies with the most advanced information systems using visual interfaces of last generation.

The most important characteristics of **OPTEX** are:

- Model formulation with algebraic language based on database tables.
- Algebraic Language similar to **GAMS**.
- Visual interface based on MS-Windows standards.
- Database and server integration with optimization models
- Solution of **LP, MIP, QP, MQP** models, depending on solver capacities.
- Solution of fractional linear problems.
- Multicriteria modeling based on weighted objective functions.
- Model generation using programs in algebraic languages of general purpose such as **GAMS, IBM ILOP OPL y AMPL**.
- Model generation with low level languages such as **C ANSI**, using links to free libraries such as: **GLPK** and **CoinMP** and links to commercial libraries such as **CPLEX** and **XPRESS**
- Problem solution, through programs in **C ANSI**, based on large scale methodologies, partition and decomposition, using Nested Benders.
- Automatic generation of stochastic multi-stage non anticipative optimization models, including **CVaR** risk control constraints
- Automatic generation of **MS-WORD** documents with all the elements of the mathematical models, oriented to the end users.
- Interface with **GIS** systems with commercial or free licenses.
- Interface with **ERP** systems based on a relational databases.
- Concurrent operation in LAN or WAN networks.

Key words: Mathematical Modeling Systems, Decision Support Systems