



ISAAC Dynamics<sup>®</sup> 3.0

Dynamic Solutions For a dynamic world

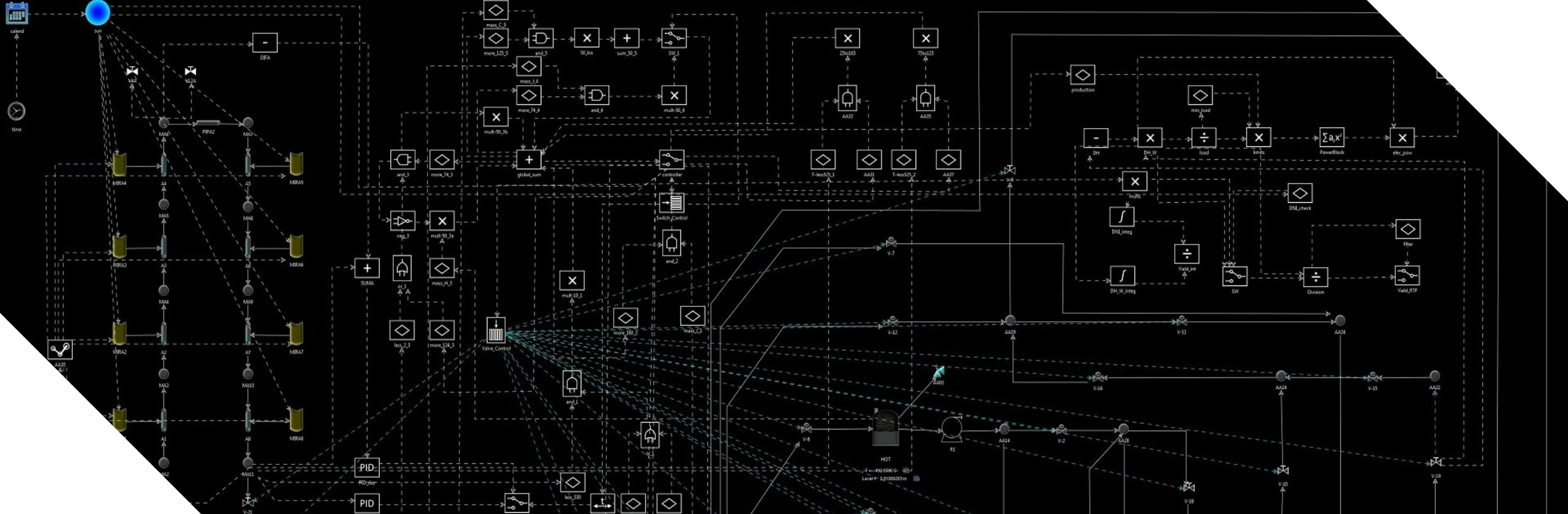


[www.TransientGroup.com](http://www.TransientGroup.com)

## Who we are

Situated in Florence (Italy), TransientGroup – formerly Struttura Informatica – is active in Dynamic Simulation since 2006. For more the **10 years** we have been working for the main international actors in the Energy Production field, helping our customers to reach their goals. TransientGroup offers its costumers integrated solutions in the fields of Power and Heat Generation

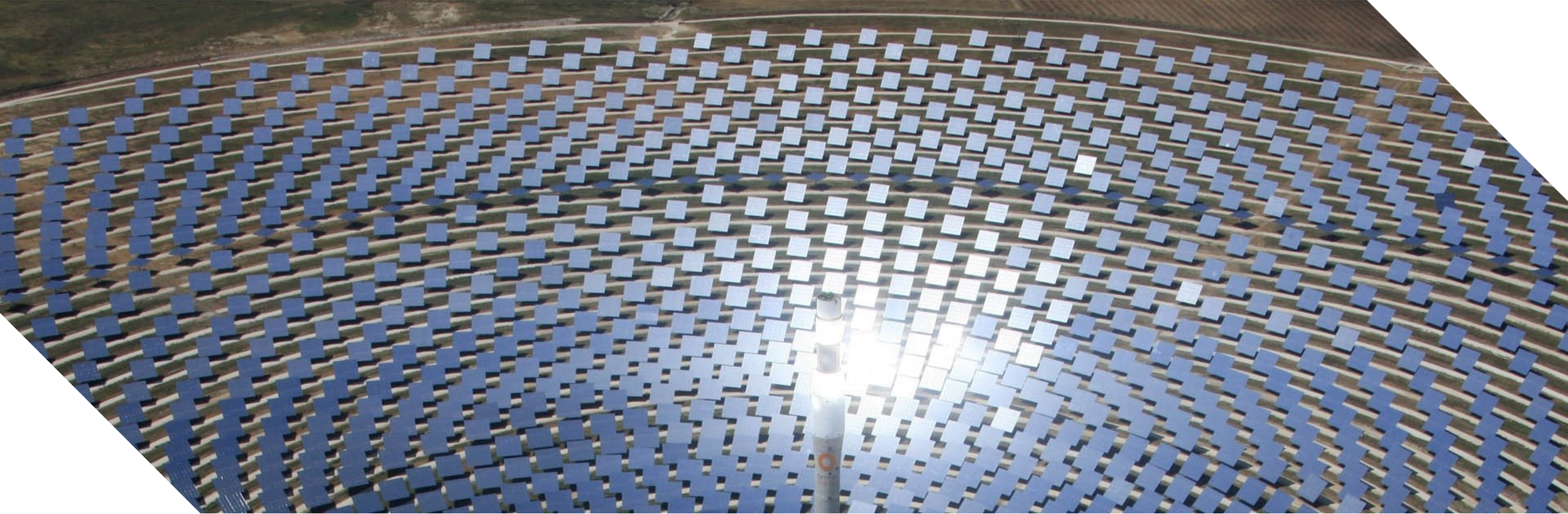




## ISAAC Dynamics<sup>©</sup> 3.0

ISAAC Dynamics is a simulation environment created for plant planning, design and optimization. ISAAC Dynamics is a powerful tool for

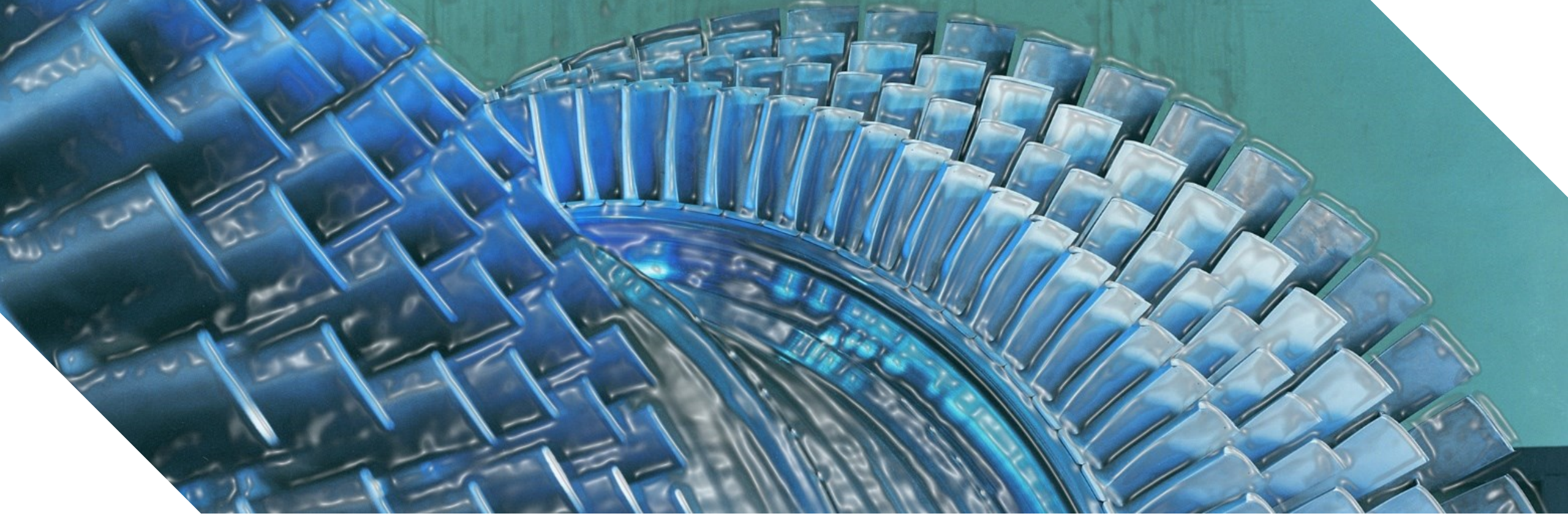
- Studies of process and dynamic modelling of advanced power plants (*Dimensioning, Dynamics, Economics, Feasibility Study, Definition and Verification of operative procedures, Verification and Optimization of the Control Strategies*)
- Analysis of the plant processes and its transient phenomena; this is a basic instrument in order to optimize the layout, dimensioning & control of all the components of a power plant.
- Choice and the pre-dimensioning of components and layout of a power plant
- It allows an easy and effective development of accurate, detailed dynamic models by means of its innovative technical features: *modular architecture, a user-friendly graphical interface, maximum portability, OS independent;*



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A strong platform for CSP Plants design and optimization

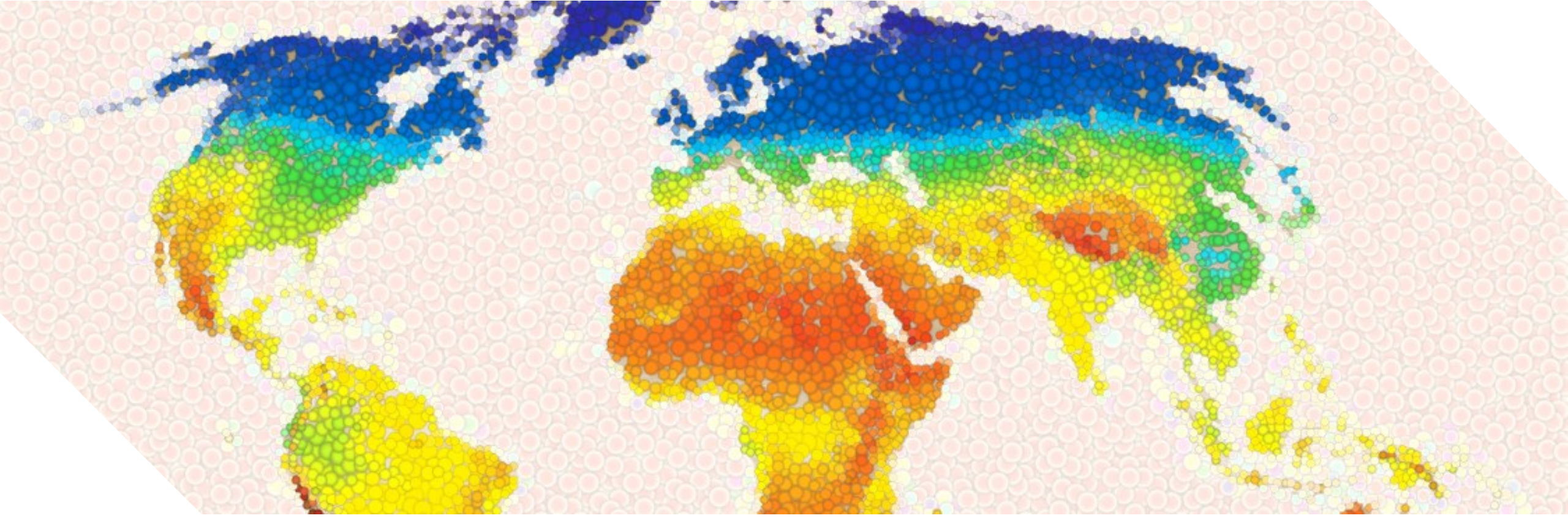
ISAAC Dynamics helped many companies designing Concentrated Solar Power Plants. With ISAAC the user can create a detailed model of a Parabolic Trough Power Plant or a Central Receiver Power Plant customizing and optimizing the layout of the real plant, obtaining fundamental information about critical parts or operations and finding alternative solutions



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### Custom Block with your equations

ISAAC Dynamics accepts customized modules that can be easily created using our user interface. Just select how many input/output variables you want and connect them to our standard blocks or to other customized blocks. Add to your block algebraic or differential equations in a few seconds and let our solid computational engine calculate the results for you.



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Need external data in your simulation?

ISAAC Dynamics accepts external files (.csv or .xls) as data in the simulation. You can link you DNI or your machine characteristic curve to a DataReader block and the platform will link, in real time, experimental data with other variables.

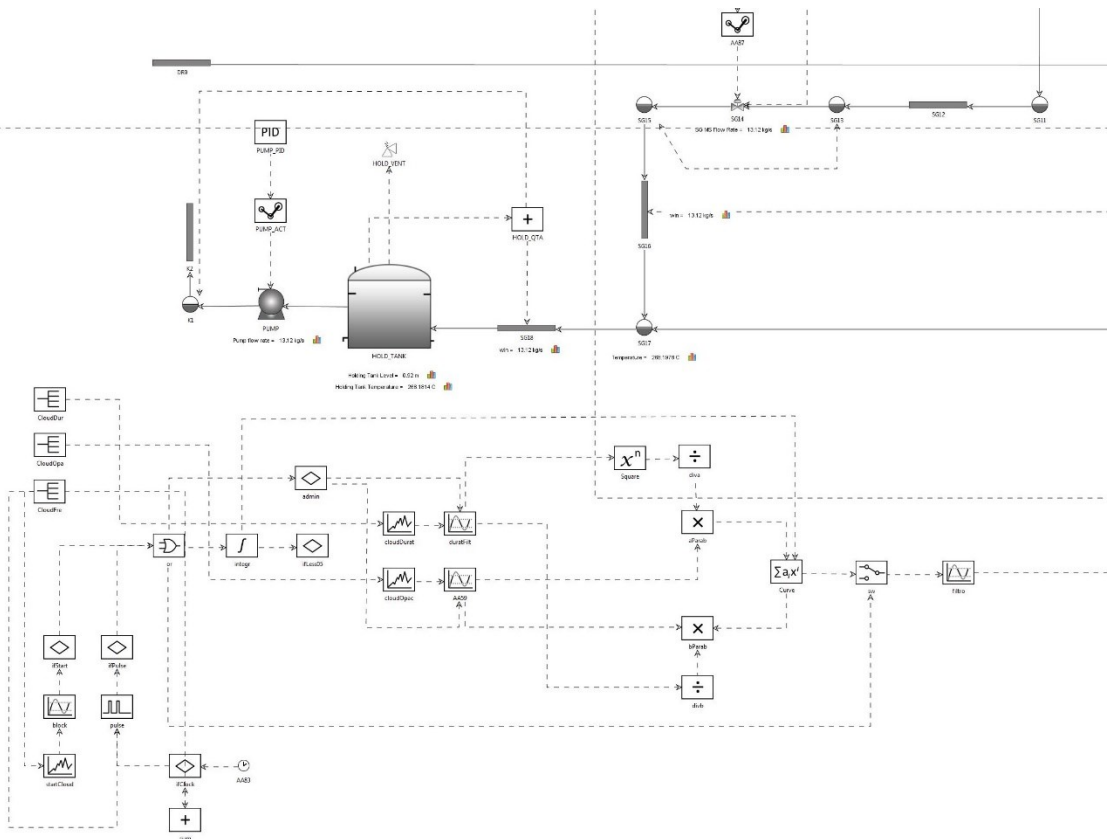


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### Our fluids library at your disposal

Use the fluids library provided with the software. At the moment we have implemented thermodynamic tables for the following fluids:

- *Water and steam*
  - *Humid air*
- *Real gas component (NIST package – more than 100 components)*
  - *Real gas complex mixtures (2 or more components)*
    - *Thermal Oils*
    - *Molten Salt*
  - *Ideal and real gases*
  - *Two phase fluids*
  - *User-defined fluids*



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## Component Library

This is a brief list of some of the components you will find in ISAAC Dynamics

### Physical components

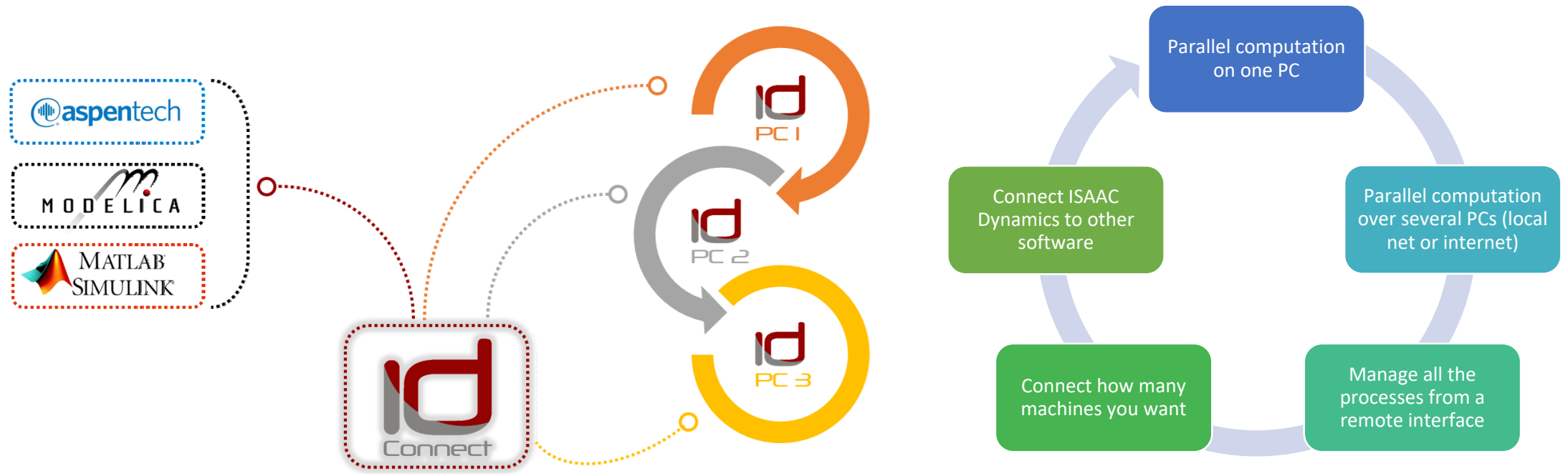
- Steam generator
- Heat Exchangers
- Condensers
- Gas ducts
- Fans
- Valves
- Manifolds
- Pipes
- Filters
- many others

### Logic and regulation

- PID controllers
- Algebraic calculation blocks
- Differential calculation blocks
- Logic Blocks (AND/OR/etc)
- Filters
- Mathematical operators
- Signal generators
- many others

### User defined

- Every kind of module (the user is able to use our fluid libraries with his customized module)
- many others



**ID Connect**  
Embedded in ID3.0

### Connect ISAAC Dynamics with other software in real time

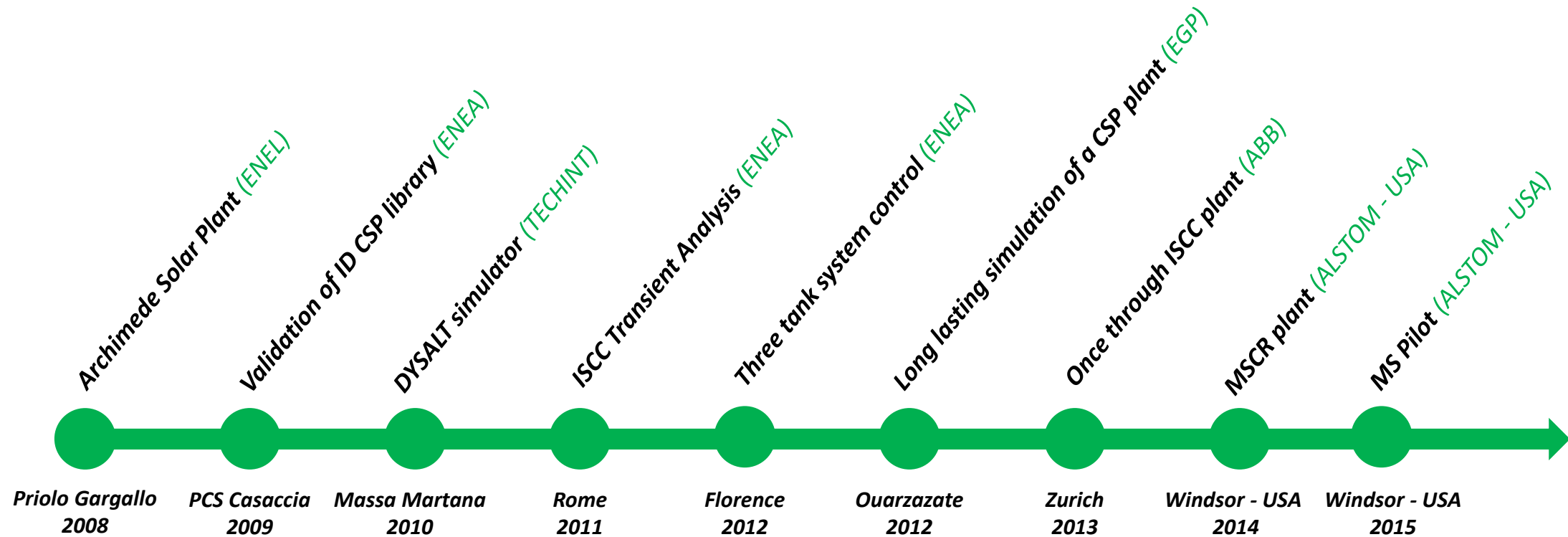
If you use another software and you already have your models, this is not a problem. ISAAC Dynamics, by means of *IDConnect*, read and write variables from other software. You can also split the computation among many machines running ID models; you will obtain faster simulations and stable results.



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Create your model and give it to your clients/partners

ISAAC Dynamics, thanks to its “Deployment” function, creates executable files that you can provide to your clients or partners to share/show results of the simulation. You can create a complete model or a demo model with encrypted variables and limited functions. They don’t need any license to analyze and run the model.



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Our experience in Solar Power Plants is inside ISAAC Dynamics

ISAAC Dynamics has been adopted during the last years for the simulation of many CSP plants. Any effort to overcome technical difficulties and improve user experience has been added, year after year, in our simulation tool in order to provide solid solutions and efficacious tools to our costumers



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Main costumers in the world

This is a short list of the main companies that have been using ISAAC Dynamics to support their design team during the last years



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ISAAC Dynamics runs over every operating system

ISAAC Dynamics is completely built in Java. That's why it can run on every operating system starting from Windows and ending with Mac OS.  
Java makes our tool robust and reliable and it allows users to easily add custom code thanks to the universality, efficiency and ease to use of this programming language.



## ISAAC Dynamics<sup>®</sup> 3.0

Support to your needs in short times

ISAAC is covered by 1 year warranty. If something is not working perfectly, we correct it and provide answers to your questions. If you need support or help with our tool, our support team is always ready to help you.



## ISAAC Dynamics<sup>®</sup> 3.0

On site training courses and know-how for your company

### CONSULTANCY SERVICES

Our team provides Engineering Consultancy Services. We build tailor-made ISAAC Dynamics models and we provide them ready to be used.

### TRAINING COURSES AND WORKSHOPS

Together with you, our engineers compile your individual plant model and answer all questions that may come up in the process of modeling. Improve your modeling expertise. We offer training courses on ISAAC Dynamics and its add-on modules from beginner to expert level; these are run by experienced project engineers.

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