

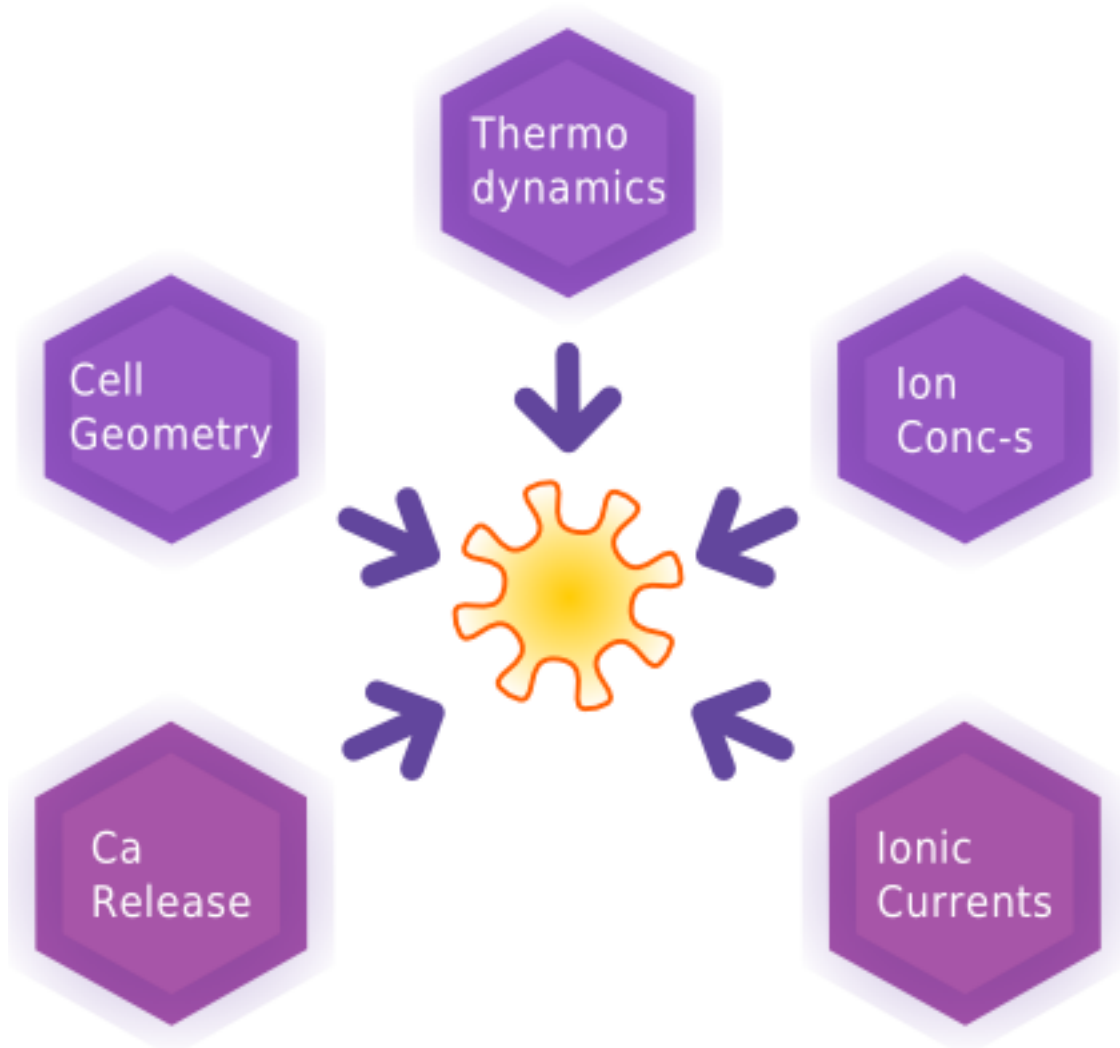
Simucore model architecture

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1. Why use Simucore models?

Simucore is a 2nd generation electrophysiological (EP) model architecture developed by Simulogic.



Main model components in Simucore architecture.

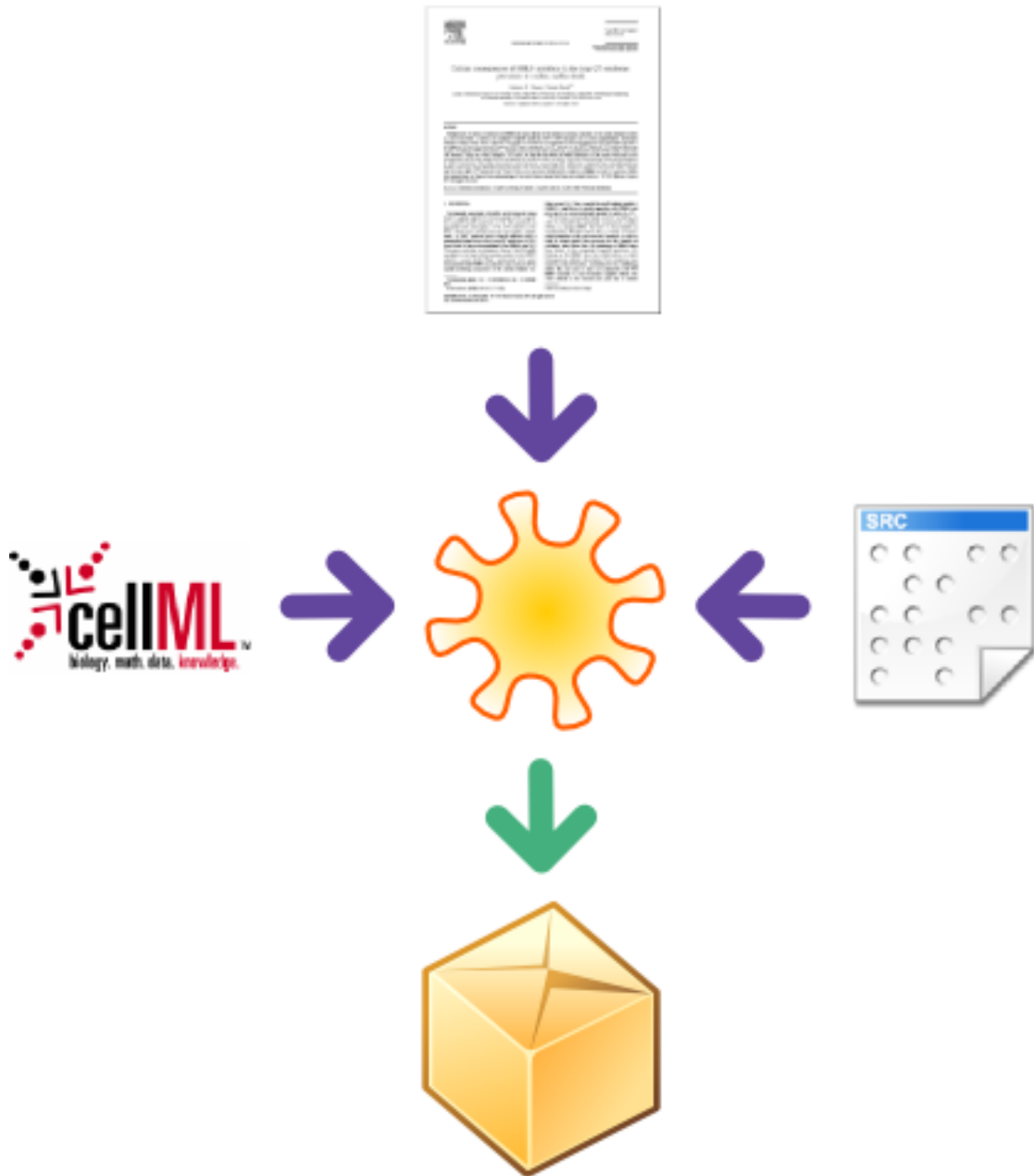
Simucore models are based on a new modular design. Each model is assembled from several reusable components, such as Cell Geometry, Ion Concentrations, Currents, etc. This design is more robust and flexible than traditional "all in one" models because components are implemented and tested individually and then combined into the integrated model. In

addition, Ca²⁺ buffering and release components can be interchanged between different models, if required.

All Simulogic stock models have been ported to this new architecture. The individual model components and integrated models were thoroughly tested. These models are 100% compatible with CESE Plus and provide the same user-friendly modeling experience you are used to.

2. How Simucore models are created

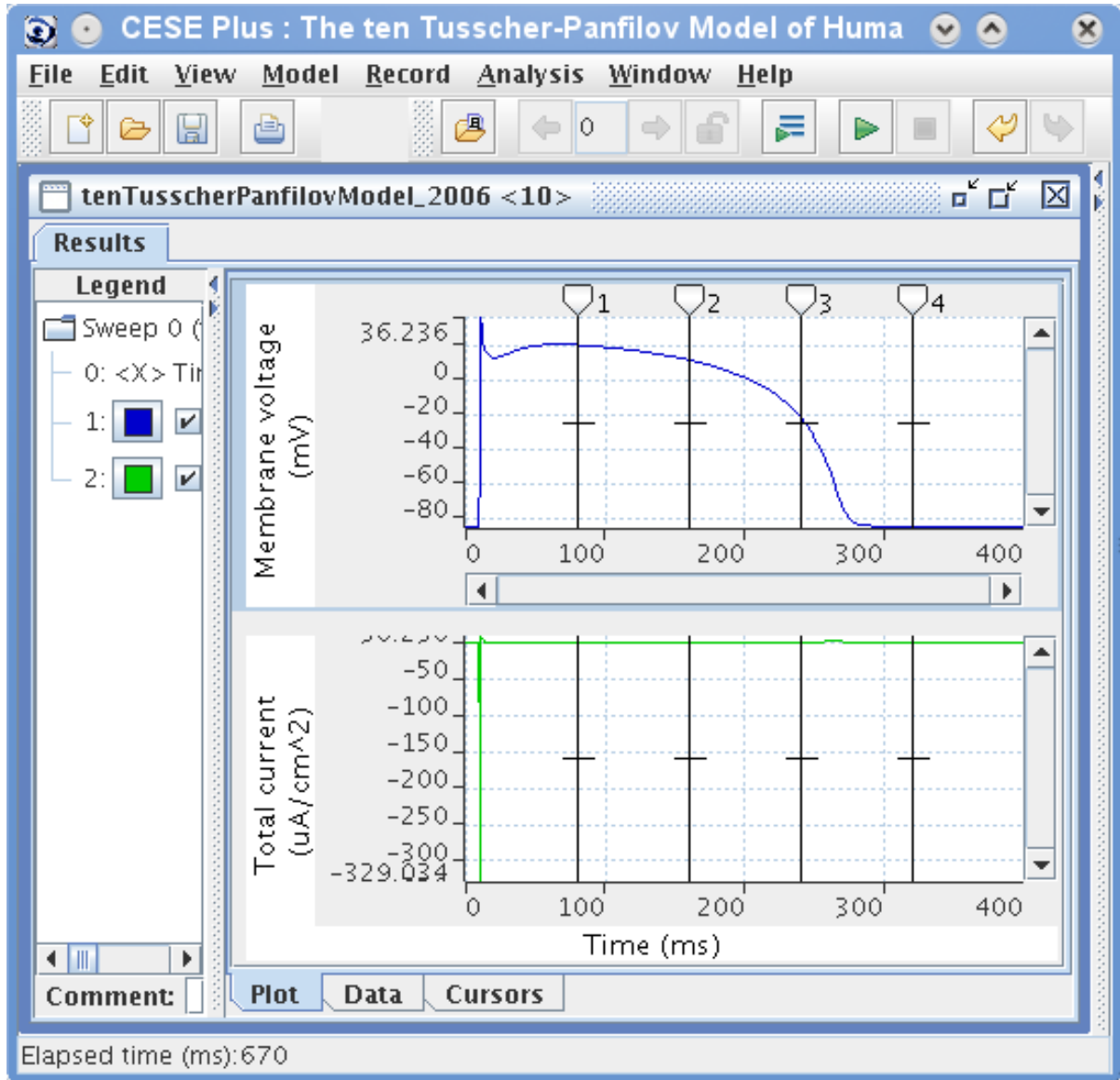
We start with a model formulation in the original paper. Model equations are subdivided into ionic currents and (if present in the original formulation) Ca²⁺ release components which are implemented in Java source code. At the same time, base supporting components are integrated into model.



Model is created from various sources.

The model formulation is then verified against CellML and (if available) known source code implementations. All discrepancies between the original paper and published code are carefully tested and resolved.

Next, the model implementation undergoes a range of tests to ensure that action potential, ionic currents, and Ca^{2+} transient configurations match published data for the model.



Example of the model running in CESE interface.

During the last stage, model parameters are prepared for integration into the user-friendly CESE Plus interface. Model is packaged and is ready to be shipped to you. Once received, model package is simply dropped into the "models" directory in your CESE Plus installation

folder and is immediately ready for simulations.

3. Order Simucore models today!

We offer [libraries](#) of ready to run electrophysiological models based on Simucore architecture. In addition, we can create [custom models](#) based on your specification.