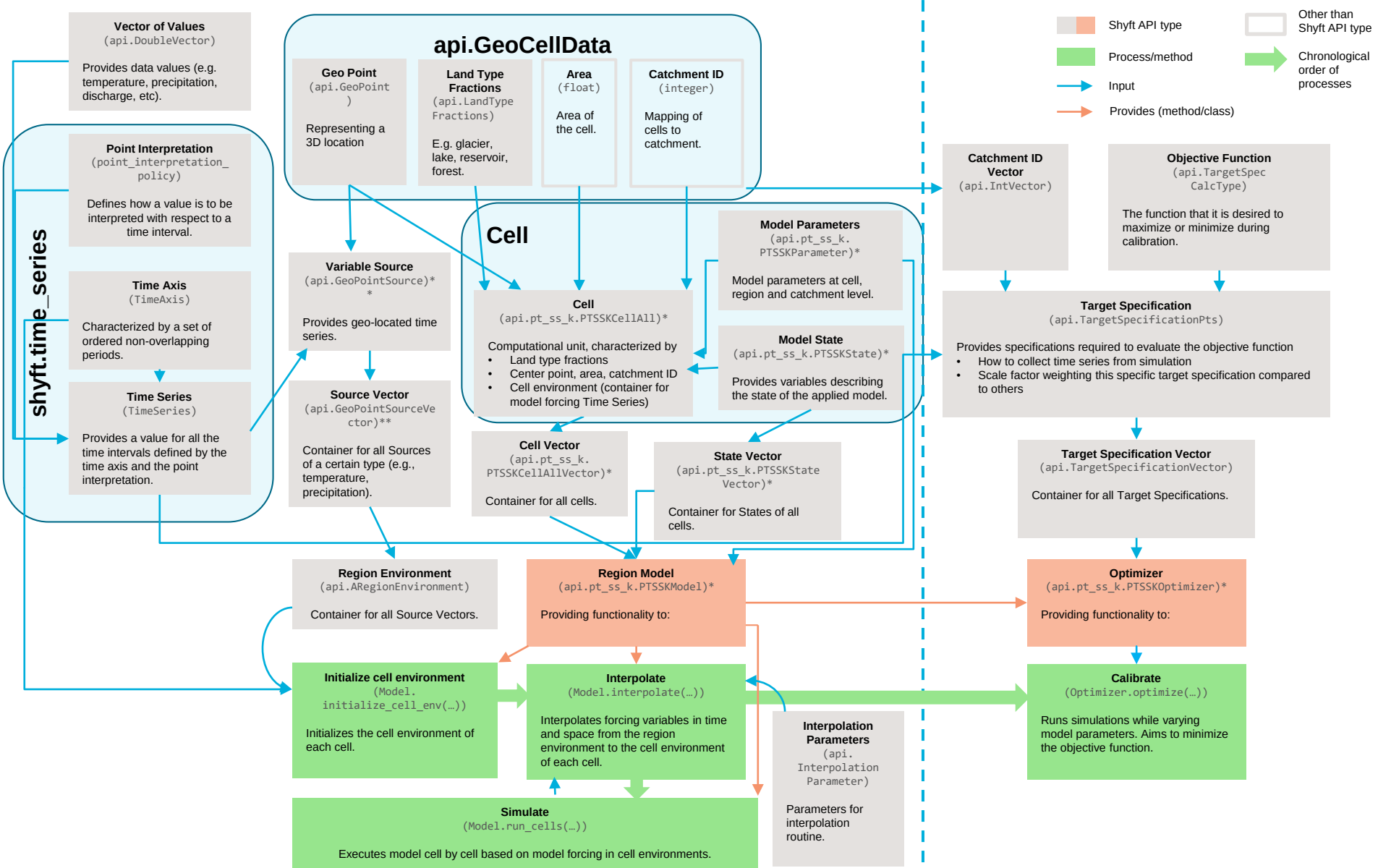
Shyft API type
Other than Shyft API type
Process/method
Chronological order of processes
Input
Provides (method/class)
Vector of Values
(api.DoubleVector)
Provides data values (e.g. temperature, precipitation, discharge, etc).
shyft.time_series
Point Interpretation
(point_interpretation_policy)
Defines how a value is to be interpreted with respect to a time interval.
Time Axis
(TimeAxis)
Characterized by a set of ordered non-overlapping periods.
Time Series
(TimeSeries)
Provides a value for all the time intervals defined by the time axis and the point interpretation.
api.GeoCellData
Geo Point
(api.GeoPoint)
Representing a 3D location
Land Type Fractions
(api.LandTypeFractions)
E.g. glacier, lake, reservoir, forest.
Area
(float)
Area of the cell.
Catchment ID
(integer)
Mapping of cells to catchment.
Variable Source
(api.GeoPointSource)**
Provides geo-located time series.
Source Vector
(api.GeoPointSourceVector)**
Container for all Sources of a certain type (e.g., temperature, precipitation).
Cell
Cell
(api.pt_ss_k.PTSSKCellAll)*
Computational unit, characterized by
• Land type fractions
• Center point, area, catchment ID
• Cell environment (container for model forcing Time Series)
Model Parameters
(api.pt_ss_k.PTSSKParameter)*
Model parameters at cell, region and catchment level.
Model State
(api.pt_ss_k.PTSSKState)*
Provides variables describing the state of the applied model.
Cell Vector
(api.pt_ss_k.PTSSKCellAllVector)*
Container for all cells.
State Vector
(api.pt_ss_k.PTSSKStateVector)*
Container for States of all cells.
Catchment ID Vector
(api.IntVector)
Objective Function
(api.TargetSpecCalcType)
The function that it is desired to maximize or minimize during calibration.
Target Specification
(api.TargetSpecificationPts)
Provides specifications required to evaluate the objective function
• How to collect time series from simulation
• Scale factor weighting this specific target specification compared to others
Target Specification Vector
(api.TargetSpecificationVector)
Container for all Target Specifications.
Region Environment
(api.ARegionEnvironment)
Container for all Source Vectors.
Region Model
(api.pt_ss_k.PTSSKModel)*
Providing functionality to:
Optimizer
(api.pt_ss_k.PTSSKOptimizer)*
Providing functionality to:
Initialize cell environment
(Model.initialize_cell_env(…))
Initializes the cell environment of each cell.
Interpolate
(Model.interpolate(…))
Interpolates forcing variables in time and space from the region environment to the cell environment of each cell.
Interpolation Parameters
(api.InterpolationParameter)
Parameters for interpolation routine.
Calibrate
(Optimizer.optimize(…))
Runs simulations while varying model parameters. Aims to minimize the objective function.
Simulate
(Model.run_cells(…))
Executes model cell by cell based on model forcing in cell environments.