Glossary

abstract syntax .................. A conceptual data organization. cf. concrete syntax.

action methods ................. The methods initialize(), prefire(), fire(), postfire(), and wrapup() in the Executable interface.

actor ............................. An executable entity. This was called a block in Ptolemy Classic.

anytype ............................ The Ptolemy Classic name for undeclared type.

applet ............................. A Java program that is downloaded from a web server by a browser and executed in the client’s computer (usually within a plug-in for the browser). An applet has restricted access to local resources for security reasons. cf. application.

application ....................... A Java program that is executed as an ordinary program on a host computer. Unlike an applet, an application can have full access to local resources such as the file system. cf. applet.

atomic actor ...................... A primitive actor. That is, one that is not a composite actor. This was called a star in Ptolemy Classic.

attribute ......................... A named property associated with a named object in Ptolemy II. Also, in XML, a modifier to an element.

block ............................. The Ptolemy Classic name for an actor.

browser ............................ A program that renders HTML and accesses the worldwide web using the HTTP protocol.

channel ........................... A path from an output port to an input port (via relations) that can transport a single stream of tokens.

clustered graph ................ A graph with hierarchy. Ptolemy II topologies are clustered graphs.

code generation .................. Translation of a model into efficient, standalone software for execution autonomously from the design environment. Code generation was a major emphasis of Ptolemy Classic.

composite actor .................. An actor that is internally composed of other actors and relations. This was called a galaxy in Ptolemy Classic.

concrete syntax .................. A persistent representation of a data organization. cf. abstract syntax.

connection ....................... A path from one port to another via relations and possibly transparent ports. A connection consists of one or more relations and two or more links.

container ........................ An object that logically owns another. A Ptolemy II object can have at most one container.

dangling relation ............... A relation with only input ports or only output ports linked to it.

data polymorphism .............. Ability to operate with more than one token type.

deep traversals .................. Traversals of a clustered graph that see through transparent cluster boundaries (transparent composite entities and ports).
**disconnected port** .......... A port with no relation linked to it.
**director** ......................... An object that controls the execution of a model or an opaque composite entity according to some *model of computation*.
**domain** .......................... An implementation of a model of computation in Ptolemy II and Ptolemy Classic.
**domain polymorphism** ...... Ability to operate under more than one model of computation.
**element** ......................... In XML, a portion of a document consisting of a begin tag, a body, and an end tag.
**entity** .......................... A node in a Ptolemy II clustered graph. Also, in XML, a named text segment.
**event** ............................ In the DE domain, an event is a token with a time stamp.
**execution** ....................... One invocation of initialize(), followed by any number of *iterations*, followed by one invocation of wrapup().
**executive director** .......... From the perspective of an actor inside an opaque composite actor, the director of the container of the opaque composite actor.
**galaxy** ......................... The Ptolemy Classic name for a *composite actor*.
**immutable property** .......... A property of an object that is set up when the object is constructed and that cannot be changed during the lifetime of the object.
**iteration** ....................... One invocation of prefire(), followed by any number of *iterations* of fire(), followed by one invocation of postfire().
**link** ............................. An association between a port and a relation.
**manager** ......................... The top-level controller for the execution of a model.
**model** ........................... A complete Ptolemy II application. This was called a *universe* in Ptolemy Classic.
**model of computation** ...... The rules that govern the interaction, communication, and control flow of a set of components.
**MoML** ............................ Modeling markup language, an XML dialect for specifying component-based designs such as those in Ptolemy II.
**multiport** ....................... A port that can send or receive tokens over more than one channel.
**opaque** ......................... For a composite entity or a port, an attribute that indicates that the inside should not be visible from the outside. That is, deep traversals of the topology do not see through an opaque boundary.
**opaque composite actor** ... A composite actor with a local director. Such an actor appears to the outside domain to be atomic, but internally is composed of an interconnection of other actors. This was called a *wormhole* in Ptolemy Classic.
**package** .......................... A collection of classes that forms a logical unit and occupies one directory in the source code tree.
**parameter** ....................... An attribute with a value. This was called a *state* in Ptolemy Classic.
**particle** ......................... The Ptolemy Classic name for a *token*.
**port** ............................. A named interface of an entity to which connections be made.
**Ptolemy Classic** ............. A C++ software system for construction of concurrent models and implementation through code generation.
Ptolemy II .................................. A Java software system for construction and execution of concurrent models.
Ptolemy Project ......................... A research project at Berkeley that investigates modeling, simulation, and design of concurrent, networked, embedded systems.
relation ................................. An object representing an interconnection between entities.
resolved type .......................... A type for a port that is consistent with the type constraints of the actor and any port it is connected to. It is the result of type resolution.
servlet ................................. A Java program that is executed on a web server and that produces results viewed remotely on a web browser.
star ...................................... The Ptolemy Classic name for an atomic actor.
state .................................... The Ptolemy Classic name for a parameter.
subpackage ............................ A package that is logically related to a parent package and occupies a subdirectory within the parent package in the source code tree.
tag ....................................... In XML, a portion of markup having the syntax <tagname>.
token ................................. A unit of data that is communicated by actors. This was called a particle in Ptolemy Classic.
topology ............................... The structure of interconnections between entities (via relations) in a Ptolemy II model. See clustered graph.
transparent ........................... For an entity or port, not opaque. That is, deep traversals of the topology pass right through its boundaries.
transparent composite actor A composite actor with no local director.
transparent port ...................... The port of a transparent composite entity. Deep traversals of the topology see right through such a port.
type constraints ........................ The declared constraints on the token types that an actor can work with.
type resolution ........................ The process of reconciling type constraints prior to running a model.
undeclared type ........................ Capable of working with any type of token. This was called anytype in Ptolemy Classic.
universe ............................... The Ptolemy Classic name for a model.
width of a port ........................ The sum of the widths of the relations linked to it, or zero if there are none.
width of a relation .................... The number of channels supported by the relation.
wormhole .............................. The Ptolemy Classic name for an opaque composite actor.