# AGREE Property Library

To make it more straightforward to write properties, we have constructed a library of property “building blocks” in AGREE. These blocks allow easy expression of common idioms used in properties. Because many of these blocks are so commonly used, several have “short names” that are parenthesized.

Boolean Nodes

(re) RisingEdge(i: bool, init: bool) returns (o: bool);

(fe) FallingEdge(i: bool, init: bool) returns (o: bool);

Initially(i: bool) returns (o: bool);

After1(i: bool) returns (o: bool);

AfterN(i: bool, n: integer) returns (o: bool);

WithinN(i: bool, n: integer) returns (o: bool);

WeakUntil(i: bool, j: bool) returns (o: bool);

Historically(i: bool) returns (o: bool);

Precedes(i: bool, j: bool) returns (o: bool);

Real-Valued Nodes

Increase(i: real, init: bool) returns (o: bool);

Decrease(i: real, init: bool) returns (o: bool);

(abs) AbsoluteValue(i: real) returns (o: real);

Delta(i: real, init: bool) returns (o: bool);

Integer-Valued Nodes

IncreaseInt(i: int, init: bool) returns (o: bool);

DecreaseInt(i: int, init: bool) returns (o: bool);

(absi) AbsoluteValueInt(i: int) returns (o: int);

DeltaInt(i: int, init: bool) returns (o: int);