4. SEQUENTIAL STATEMENTS

wait [**on** {SIGID,}] [**until** expr] [**for** time];

assert expr
  [**report** string]
  [**severity note** | **warning** | **error** | **failure**];

report *string*
  [severity note | ***warning*** | ***error*** | ***failure];***

SIGID **<=** [**transport**] | [[***reject*** *TIME*] ***inertial***]
  {expr [**after** time],};

VARID **:=** expr;

PROCEDUREID[({[PARID **=>**] expr,})];

[*LABEL:*] **if** expr **then**
  {sequential_statement}
[{**elsif** expr **then**
  {sequential_statement}}]
[**else**
  {sequential_statement}]
end if [*LABEL*];

[*LABEL:*] **case** expr **is**
{**when** choice [{| choice}] **=>**
  {sequential_statement}}
end case [*LABEL*];

[LABEL:] [**while** expr] **loop**
  {sequential_statement}
end loop [LABEL];

[LABEL:] **for** ID **in** range **loop**
  {sequential_statement}
end loop [LABEL];

next [LOOPLBL] [**when** expr];

exit [LOOPLBL] [**when** expr];

return [expression];

null;

5. PARALLEL STATEMENTS

LABEL: **block** [***is***]
  [**generic (** {ID : TYPEID;} **);**
    [**generic map (** {[GENID **=>**] expr,} **);**]]
  [**port (** {ID : **in** | **out** | **inout** TYPEID } **);**
    [**port map (** {[PORTID **=>**] SIGID | *expr*,} **)**];]
  [{declaration}]
begin
  [{parallel_statement}]
end block [LABEL];

[LABEL:] [***postponed***] **process** [**(** {SIGID,} **)**]
  [{declaration}]
begin
  [{sequential_statement}]
end [***postponed***] **process** [LABEL];

[LBL:] [***postponed***] PROCID({[PARID **=>**] expr,});

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[LABEL:] [***postponed***] **assert** expr
  [**report** string]
  [**severity note** | **warning** | **error** | **failure**];

[LABEL:] [***postponed***] SIGID **<=**
  [**transport**] | [[***reject*** *TIME*] ***inertial***]
  [{{expr [**after** TIME,]} | ***unaffected*** **when** expr **else**}]
  {expr [**after** TIME,]} | ***unaffected***;

[LABEL:] [***postponed***] **with** expr **select**
  SIGID **<=** [**transport**] | [[***reject*** *TIME*] ***inertial***]
    {{expr [**after** TIME,]} | ***unaffected***
      when choice [{| choice}]};

LABEL: COMPID
    [[**generic map (** {GENID **=>** expr,} **)**]
     port map ({[PORTID **=>**] SIGID | *expr*,} **)**];

LABEL: ***entity*** *[LIBID.]ENTITYID [(ARCHID)]*
    *[[**generic map (** {GENID **=>** expr,} **)***]
     port map (*{[PORTID **=>**] SIGID | expr,} **)];***

LABEL: ***configuration*** *[LIBID.]CONFID*
    *[[**generic map (** {GENID **=>** expr,} **)***]
     port map (*{[PORTID **=>**] SIGID | expr,} **)];***

LABEL: **if** expr **generate**
  [{parallel_statement}]
end generate [LABEL];

LABEL: **for** ID **in** range **generate**
  [{parallel_statement}]
end generate [LABEL];

6. PREDEFINED ATTRIBUTES

TYPID**'base**	Base type
TYPID**'left**	Left bound value
TYPID**'right**	Right-bound value
TYPID**'high**	Upper-bound value
TYPID**'low**	Lower-bound value
TYPID**'pos(**expr**)**	Position within type
TYPID**'val(**expr**)**	Value at position
TYPID**'succ(**expr**)**	Next value in order
TYPID**'pred(**expr**)**	Previous value in order
TYPID**'leftof(**expr**)**	Value to the left in order
TYPID**'rightof(**expr**)**	Value to the right in order
*TYPID**'ascending***	*Ascending type predicate*
*TYPID**'image(**expr**)***	*String image of value*
*TYPID**'value(**string**)***	*Value of string image*
ARYID**'left**[(expr)]	Left-bound of [nth] index
ARYID**'right**[(expr)]	Right-bound of [nth] index
ARYID**'high**[(expr)]	Upper-bound of [nth] index
ARYID**'low**[(expr)]	Lower-bound of [nth] index
ARYID**'range**[(expr)]	'left down/to 'right
ARYID**'reverse_range**[(expr)]	'right down/to 'left
ARYID**'length**[(expr)]	Length of [nth] dimension
*ARYID**'ascending**[(expr)]*	*'right >= 'left ?*
SIGID**'delayed**[(TIME)]	Delayed copy of signal
SIGID**'stable**[(TIME)]	Signals event on signal
SIGID**'quiet**[(TIME)]	Signals activity on signal
SIGID**'transaction**	Toggles if signal active

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SIGID**'event**	Event on signal ?
SIGID**'active**	Activity on signal ?
SIGID**'last_event**	Time since last event
SIGID**'last_active**	Time since last active
SIGID**'last_value**	Value before last event
*SIGID**'driving***	*Active driver predicate*
*SIGID**'driving_value***	*Value of driver*
*OBJID**'simple_name***	*Name of object*
*OBJID**'instance_name***	*Pathname of object*
*OBJID**'path_name***	*Pathname to object*

7. PREDEFINED TYPES

BOOLEAN	True or false
INTEGER	32 or 64 bits
NATURAL	Integers >= 0
POSITIVE	Integers > 0
REAL	Floating-point
BIT	'0', '1'
BIT_VECTOR(NATURAL)	Array of bits
CHARACTER	7-bit ASCII
STRING(POSITIVE)	Array of characters
TIME	hr, min, sec, ms, us, ns, ps, fs
DELAY_LENGTH	*Time >= 0*

8. PREDEFINED FUNCTIONS

NOW Returns current simulation time

DEALLOCATE(ACCESSTYPOBJ**)**
Deallocate dynamic object

FILE_OPEN(*[status], FILEID, string, mode****)***
Open file

FILE_CLOSE(*FILEID****)*** *Close file*

9. LEXICAL ELEMENTS

Identifier ::= letter { [underline] alphanumeric }

decimal literal ::=integer [**.** integer] [**E**[**+**|**-**] integer]

based literal ::=
integer **#** hexint [**.** hexint] **#** [**E**[**+**|**-**] integer]

bit string literal ::= **B**|**O**|**X** **"** hexint **"**

comment ::= **--** comment text

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