```
root                => 
                    => xd_high_page     :num_val
                    => xd_user_root     :user_root
                    => xd_source_list   :sourceline
                    => xd_err_count     :num_val
                    => spare_1          :void
                    ;
sourceline          => 
                    => xd_number        :num_val
                    => xd_error_list    :error
                    ;
num_val             => 
                    ;
error               => 
                    => xd_srcpos        :Source_Position
                    => xd_text          :txtrep
                    ;
txtrep              => 
                    ;
user_root           => 
                    => xd_sourcename    :txtrep
                    => xd_grammar       :void
                    => xd_statelist     :void
                    => xd_structure     :compilation
                    => xd_timestamp     :Integer
                    => spare_3          :void
                    ;
compilation         => 
                    => as_compltn_unit_s :compltn_unit_s
                    => lx_srcpos        :Source_Position
                    ;
compltn_unit_s      => 
                    => as_list          :compilation_unit
                    => lx_srcpos        :Source_Position
                    ;
compilation_unit    => (explications)
                    => as_context_elem_s :context_elem_s
                    => as_all_decl      :ALL_DECL
                    => as_pragma_s      :pragma_s
                    => lx_srcpos        :Source_Position
                    => xd_timestamp     :Integer
                    => xd_with_list     :trans_with
                    => xd_nbr_pages     :Integer
                    => xd_parent        :compilation_unit
                    => xd_lib_name      :symbol_rep
                    ;
```

```
pragma_s            => 
                    => as_list          :pragma
                    => lx_srcpos        :Source_Position
                    ;
symbol_rep          => 
                    => xd_text          :txtrep
                    => xd_deflist       :DEF_NAME
                    ;
false               => 
                    ;
true                => 
                    ;
nil                 => 
                    ;
list                => 
                    => xd_head          :void
                    => xd_tail          :void
                    ;
hash                => 
                    => xd_list          :symbol_rep
                    ;
void                => 
                    ;
```

ALL_SOURCE > CONTEXT_ELEM

```
context_elem_s      => 
                    => as_list          :CONTEXT_ELEM
                    => lx_srcpos        :Source_Position
                    ;

context_pragma      => 
                    => as_pragma        :pragma
                    => lx_srcpos        :Source_Position
                    ;
with                => 
                    => as_name_s        :name_s
                    => as_use_pragma_s  :use_pragma_s
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > ALL_DECL

```
subunit          =>
                 => as_name          :NAME
                 => as_subunit_body  :SUBUNIT_BODY
                 => lx_srcpos        :Source_Position
                 ;
block_master     =>
                 => lx_srcpos        :Source_Position
                 => sm_stm           :STM
                 ;
```

ALL_SOURCE > ALL_DECL > ITEM

```
item_s           =>
                 => as_list          :ITEM
                 => lx_srcpos        :Source_Position
                 ;
```

ALL_SOURCE > ALL_DECL > ITEM > SUBUNIT_BODY

```
subprogram_body  =>
                 => as_source_name   :SOURCE_NAME
                 => as_body          :BODY
                 => as_header        :HEADER
                 => lx_srcpos        :Source_Position
                 ;
package_body     =>
                 => as_source_name   :SOURCE_NAME
                 => as_body          :BODY
                 => lx_srcpos        :Source_Position
                 ;
task_body        =>
                 => as_source_name   :SOURCE_NAME
                 => as_body          :BODY
                 => lx_srcpos        :Source_Position
                 ;
```

ALL_SOURCE > ALL_DECL > ITEM > DECL

```
decl_s           =>
                 => as_list          :DECL
                 => lx_srcpos        :Source_Position
                 ;

null_comp_decl   =>
                 => lx_srcpos        :Source_Position
                 ;
```

ALL_SOURCE > ALL_DECL > ITEM > DECL > ID_DECL

```
type_decl        =>
                 => as_source_name   :SOURCE_NAME
                 => as_dscrmt_decl_s :dscrmt_decl_s
                 => as_type_def      :TYPE_DEF
                 => lx_srcpos        :Source_Position
                 ;
subtype_decl     =>
                 => as_source_name   :SOURCE_NAME
                 => as_subtype_indication
                 :subtype_indication
                 => lx_srcpos        :Source_Position
                 ;
task_decl        =>
                 => as_source_name   :SOURCE_NAME
                 => as_decl_s        :decl_s
                 => lx_srcpos        :Source_Position
                 ;
```

> ALL_DECL > ITEM > DECL > ID_DECL > SIMPLE_RENAME

```
renames_obj_decl =>
                 => as_source_name   :SOURCE_NAME
                 => as_name          :NAME
                 => as_type_mark_name :NAME
                 => lx_srcpos        :Source_Position
                 ;
renames_exc_decl =>
                 => as_source_name   :SOURCE_NAME
                 => as_name          :NAME
                 => lx_srcpos        :Source_Position
                 ;
```

> ALL_DECL > ITEM > DECL > ID_DECL > UNIT_DECL

```
generic_decl     =>
                 => as_source_name   :SOURCE_NAME
                 => as_header        :HEADER
                 => as_item_s        :item_s
                 => lx_srcpos        :Source_Position
                 ;
```

> ITEM > DECL > ID_DECL > UNIT_DECL > NON_GENERIC_DECL

```
subprog_entry_decl =>
                 => as_source_name   :SOURCE_NAME
                 => as_header        :HEADER
                 => as_unit_kind     :UNIT_KIND
                 => lx_srcpos        :Source_Position
                 ;
package_decl     =>
                 => as_source_name   :SOURCE_NAME
                 => as_header        :HEADER
                 => as_unit_kind     :UNIT_KIND
                 => lx_srcpos        :Source_Position
                 ;
```

DECL > ITEM > DECL > ID_S_DECL

```
exception_decl   =>
                 => as_source_name_s :source_name_s
                 => lx_srcpos        :Source_Position
                 ;
deferred_constant_decl =>            (explications)
                 => as_source_name_s :source_name_s
                 => as_name          :NAME
                 => lx_srcpos        :Source_Position
                 ;
```

> ITEM > DECL > ID_S_DECL > EXP_DECL

```
number_decl      =>                  (explications)
                 => as_source_name_s :source_name_s
                 => as_exp           :EXP
                 => lx_srcpos        :Source_Position
                 ;
```

> ITEM > DECL > ID_S_DECL > EXP_DECL > OBJECT_DECL

```
constant_decl    =>
                 => as_source_name_s :source_name_s
                 => as_exp           :EXP
                 => as_type_def      :TYPE_DEF
                 => lx_srcpos        :Source_Position
                 ;
variable_decl    =>
                 => as_source_name_s :source_name_s
                 => as_exp           :EXP
                 => as_type_def      :TYPE_DEF
                 => lx_srcpos        :Source_Position
                 ;
```

ALL_SOURCE > ALL_DECL > ITEM > DECL > REP

```
record_rep          =>                      (explications)
                    => as_name              :NAME
                    => as_alignment_clause  :ALIGNMENT_CLAUSE
                    => as_comp_rep_s        :comp_rep_s
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > ALL_DECL > ITEM > DECL > REP > NAMED_REP

```
address             =>                      (explications)
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
length_enum_rep     =>
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > ALL_DECL > ITEM > DECL > USE_PRAGMA

```
use_pragma_s        =>
                    => as_list              :USE_PRAGMA
                    => lx_srcpos            :Source_Position
                    ;
use                 =>
                    => as_name_s            :name_s
                    => lx_srcpos            :Source_Position
                    ;
pragma              =>
                    => as_used_name_id      :used_name_id
                    => as_general_assoc_s   :general_assoc_s
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > ALL_DECL > ITEM > DSCRMT_PARAM_DECL

```
dscrmt_decl_s       =>
                    => as_list              :dscrmt_decl
                    => lx_srcpos            :Source_Position
                    ;
dscrmt_decl         =>
                    => as_source_name_s     :source_name_s
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > ALL_DECL > ITEM > DSCRMT_PARAM_DECL > PARAM

```
param_s             =>
                    => as_list              :PARAM
                    => lx_srcpos            :Source_Position
                    ;
in                  =>
                    => as_source_name_s     :source_name_s
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    => lx_default           :BOOLEAN
                    ;;
out                 =>
                    => as_source_name_s     :source_name_s
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
in_out              =>
                    => as_source_name_s     :source_name_s
                    => as_name              :NAME
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > ALIGNMENT_CLAUSE

```
alignment           =>
                    => as_pragma_s      :pragma_s
                    => as_exp           :EXP
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > COMP_REP_ELEM

```
comp_rep_s          =>
                    => as_list          :COMP_REP_ELEM
                    => lx_srcpos        :Source_Position
                    ;
.....
comp_rep            =>
                    => as_name          :NAME
                    => as_exp           :EXP
                    => as_range         :RANGE
                    => lx_srcpos        :Source_Position
                    ;
comp_rep_pragma     =>
                    => as_pragma        :pragma
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > HEADER

```
package_spec        =>
                    => as_decl_s1       :decl_s
                    => as_decl_s2       :decl_s
                    => lx_srcpos        :Source_Position
                    => xd_body_is_required :BOOLEAN
                    ;
```

ALL_SOURCE > HEADER > SUBP_ENTRY_HEADER

```
procedure_spec      =>
                    => as_param_s       :param_s
                    => lx_srcpos        :Source_Position
                    ;
function_spec       =>
                    => as_param_s       :param_s
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    ;
entry               =>
                    => as_param_s       :param_s
                    => as_discrete_range :DISCRETE_RANGE
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > UNIT_DESC > BODY

```
block_body          =>
                    => as_item_s        :item_s
                    => as_stm_s         :stm_s
                    => as_alternative_s :alternative_s
                    => lx_srcpos        :Source_Position
                    => cd_level         :Integer
                    => cd_return_label  :Integer
                    => cd_result_offset :Integer
                    ;
stub                =>
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > ALTERNATIVE_ELEM

```
alternative_s       =>
                    => as_list          :ALTERNATIVE_ELEM
                    => lx_srcpos        :Source_Position
                    ;
.....
alternative         =>
                    => as_choice_s      :choice_s
                    => as_stm_s         :stm_s
                    => lx_srcpos        :Source_Position
                    ;
alternative_pragma  =>
                    => as_pragma        :pragma
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > CHOICE

```
choice_s            =>
                    => as_list          :CHOICE
                    => lx_srcpos        :Source_Position
                    => cd_label         :Integer
                    ;
.....
choice_exp          =>
                    => as_exp           :EXP
                    => lx_srcpos        :Source_Position
                    ;
choice_range        =>
                    => as_discrete_range :DISCRETE_RANGE
                    => lx_srcpos        :Source_Position
                    ;
choice_others       =>
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > UNIT_DESC > UNIT_KIND

```
renames_unit        =>
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    ;
instantiation       =>
                    => as_name          :NAME
                    => as_general_assoc_s :general_assoc_s
                    => lx_srcpos        :Source_Position
                    => sm_decl_s        :decl_s
                    ;
name_default        =>
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    ;
box_default         =>
                    => lx_srcpos        :Source_Position
                    ;
no_default          =>
                    => lx_srcpos        :Source_Position
                    ;
```

ALL_SOURCE > TYPE_DEF

```
enumeration_def     =>
                    => as_enum_literal_s    :enum_literal_s
                    => lx_srcpos            :Source_Position
                    ;
record_def          =>
                    => as_comp_list         :comp_list
                    => lx_srcpos            :Source_Position
                    ;
formal_integer_def  =>
                    => lx_srcpos            :Source_Position
                    ;
formal_fixed_def    =>
                    => lx_srcpos            :Source_Position
                    ;
formal_float_def    =>
                    => lx_srcpos            :Source_Position
                    ;
private_def         =>
                    => lx_srcpos            :Source_Position
                    ;
l_private_def       =>
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > TYPE_DEF > CONSTRAINED_DEF

```
subtype_indication  =>
                    => as_constraint        :CONSTRAINT
                    => as_name              :NAME
                    => lx_srcpos            :Source_Position
                    ;
integer_def         =>
                    => as_constraint        :CONSTRAINT
                    => lx_srcpos            :Source_Position
                    ;
float_def           =>
                    => as_constraint        :CONSTRAINT
                    => lx_srcpos            :Source_Position
                    ;
fixed_def           =>
                    => as_constraint        :CONSTRAINT
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > TYPE_DEF > ARR_ACC_DER_DEF

```
constrained_array_def =>
                    => as_subtype_indication
                    :subtype_indication
                    => as_constraint        :CONSTRAINT
                    => lx_srcpos            :Source_Position
                    ;
unconstrained_array_def =>
                    => as_subtype_indication
                    :subtype_indication
                    => as_index_s           :index_s
                    => lx_srcpos            :Source_Position
                    ;
access_def          =>
                    => as_subtype_indication
                    :subtype_indication
                    => lx_srcpos            :Source_Position
                    ;
derived_def         =>
                    => as_subtype_indication
                    :subtype_indication
                    => lx_srcpos            :Source_Position
                    => xd_derived_subprog_list
                    :SUBPROG_NAME
                    ;
formal_dscrt_def    =>
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > index

```
index_s             =>
                    => as_list              :index
                    => lx_srcpos            :Source_Position
                    ;
.....
index               =>
                    => as_name              :NAME
                    => lx_srcpos            :Source_Position
                    => sm_type_spec         :TYPE_SPEC
                    ;
```

ALL_SOURCE > comp_list

```
comp_list           =>
                    => as_decl_s            :decl_s
                    => as_variant_part      :VARIANT_PART
                    => as_pragma_s          :pragma_s
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > VARIANT_PART

```
variant_part        =>
                    => as_name              :NAME
                    => as_variant_s         :variant_s
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > VARIANT_ELEM

```
variant_s           =>
                    => as_list              :VARIANT_ELEM
                    => lx_srcpos            :Source_Position
                    ;
.....
variant             =>
                    => as_choice_s          :choice_s
                    => as_comp_list         :comp_list
                    => lx_srcpos            :Source_Position
                    ;
variant_pragma      =>
                    => as_pragma            :pragma
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > CONSTRAINT

```
index_constraint    =>
                    => as_discrete_range_s  :discrete_range_s
                    => lx_srcpos            :Source_Position
                    ;
dscrmt_constraint   =>
                    => as_general_assoc_s   :general_assoc_s
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > CONSTRAINT > REAL_CONSTRAINT

```
float_constraint    =>
                    => as_exp               :EXP
                    => as_range             :RANGE
                    => lx_srcpos            :Source_Position
                    => sm_type_spec         :TYPE_SPEC
                    ;
fixed_constraint    =>
                    => as_exp               :EXP
                    => as_range             :RANGE
                    => lx_srcpos            :Source_Position
                    => sm_type_spec         :TYPE_SPEC
                    ;
```

ALL_SOURCE > CONSTRAINT > DISCRETE_RANGE

```
discrete_range_s        =>
                        => as_list              :DISCRETE_RANGE
                        => lx_srcpos            :Source_Position
                        ;

discrete_subtype        =>
                        => as_subtype_indication
                        :subtype_indication
                        => lx_srcpos            :Source_Position
                        ;
```

ALL_SOURCE > CONSTRAINT > DISCRETE_RANGE > RANGE

```
range                   =>
                        => as_exp1              :EXP
                        => as_exp2              :EXP
                        => lx_srcpos            :Source_Position
                        => sm_type_spec         :TYPE_SPEC
                        ;
range_attribute         =>
                        => as_name              :NAME
                        => as_used_name_id      :used_name_id
                        => as_exp               :EXP
                        => lx_srcpos            :Source_Position
                        => sm_type_spec         :TYPE_SPEC
                        ;
```

ALL_SOURCE > STM_ELEM

```
stm_s           =>
                => as_list          :STM_ELEM
                => lx_srcpos        :Source_Position
                ;

stm_pragma      =>
                => as_pragma        :pragma
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM

```
null_stm        =>
                => lx_srcpos        :Source_Position
                ;
labeled         =>
                => as_source_name_s :source_name_s
                => as_pragma_s      :pragma_s
                => as_stm           :STM
                => lx_srcpos        :Source_Position
                ;
abort           =>
                => as_name_s        :name_s
                => lx_srcpos        :Source_Position
                ;
accept          =>
                => as_name          :NAME
                => as_param_s       :param_s
                => as_stm_s         :stm_s
                => lx_srcpos        :Source_Position
                ;
terminate       =>
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM > CLAUSES_STM

```
if              =>
                => as_test_clause_elem_s
                :test_clause_elem_s
                => as_stm_s         :stm_s
                => lx_srcpos        :Source_Position
                ;
selective_wait  =>
                => as_test_clause_elem_s
                :test_clause_elem_s
                => as_stm_s         :stm_s
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM > STM_WITH_EXP

```
return          =>
                => as_exp           :EXP
                => lx_srcpos        :Source_Position
                ;
case            =>
                => as_exp           :EXP
                => as_alternative_s :alternative_s
                => lx_srcpos        :Source_Position
                ;
delay           =>
                => as_exp           :EXP
                => lx_srcpos        :Source_Position
                ;
```

> STM_ELEM > STM > STM_WITH_EXP > STM_WITH_EXP_NAME

```
exit            =>
                => as_exp           :EXP
                => as_name          :NAME
                => lx_srcpos        :Source_Position
                => sm_stm           :STM
                ;
assign          =>
                => as_exp           :EXP
                => as_name          :NAME
                => lx_srcpos        :Source_Position
                ;
code            =>
                => as_exp           :EXP
                => as_name          :NAME
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM > STM_WITH_NAME

```
goto            =>
                => as_name          :NAME
                => lx_srcpos        :Source_Position
                ;
raise           =>
                => as_name          :NAME
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM > STM_WITH_NAME > CALL_STM

```
entry_call      =>
                => as_name          :NAME
                => as_general_assoc_s :general_assoc_s
                => lx_srcpos        :Source_Position
                => sm_normalized_param_s
                :exp_s
                ;
procedure_call  =>
                => as_name          :NAME
                => as_general_assoc_s :general_assoc_s
                => lx_srcpos        :Source_Position
                => sm_normalized_param_s
                :exp_s
                ;
```

ALL_SOURCE > STM_ELEM > STM > BLOCK_LOOP

```
loop            =>
                => as_source_name   :SOURCE_NAME
                => as_iteration     :ITERATION
                => as_stm_s         :stm_s
                => lx_srcpos        :Source_Position
                => cd_level         :Integer
                => cd_after_loop    :Integer
                ;
block           =>
                => as_source_name   :SOURCE_NAME
                => as_block_body    :block_body
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > STM_ELEM > STM > ENTRY_STM

```
cond_entry      =>
                => as_stm_s1        :stm_s
                => as_stm_s2        :stm_s
                => lx_srcpos        :Source_Position
                ;
timed_entry     =>
                => as_stm_s1        :stm_s
                => as_stm_s2        :stm_s
                => lx_srcpos        :Source_Position
                ;
```

ALL_SOURCE > ITERATION

```
for                 =>
                    => as_source_name       :SOURCE_NAME
                    => as_discrete_range    :DISCRETE_RANGE
                    => lx_srcpos            :Source_Position
                    ;
reverse             =>
                    => as_source_name       :SOURCE_NAME
                    => as_discrete_range    :DISCRETE_RANGE
                    => lx_srcpos            :Source_Position
                    ;
while               =>
                    => as_exp               :EXP
                    => lx_srcpos            :Source_Position
                    ;
```

ALL_SOURCE > TEST_CLAUSE_ELEM

```
test_clause_elem_s  =>
                    => as_list              :TEST_CLAUSE_ELEM
                    => lx_srcpos            :Source_Position
                    ;
```

```
cond_clause         =>
                    => as_exp               :EXP
                    => as_stm_s             :stm_s
                    => lx_srcpos            :Source_Position
                    ;
select_alternative  =>
                    => as_exp               :EXP
                    => as_stm_s             :stm_s
                    => lx_srcpos            :Source_Position
                    ;
select_alt_pragma   =>
                    => as_pragma            :pragma
                    => lx_srcpos            :Source_Position
                    ;
```

GENERAL_ASSOC

```
general_assoc_s     =>
                    => as_list          :GENERAL_ASSOC
                    => lx_srcpos        :Source_Position
                    ;
named               =>
                    => as_exp           :EXP
                    => as_choice_s      :choice_s
                    => lx_srcpos        :Source_Position
                    ;
assoc               =>
                    => as_exp           :EXP
                    => as_used_name     :USED_NAME
                    => lx_srcpos        :Source_Position
                    ;
```

GENERAL_ASSOC > EXP

```
exp_s               =>
                    => as_list          :EXP
                    => lx_srcpos        :Source_Position
                    ;
```

GENERAL_ASSOC > EXP > NAME

```
name_s              =>
                    => as_list          :NAME
                    => lx_srcpos        :Source_Position
                    ;
used_char           =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_defn          :DEF_NAME
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
used_object_id      =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_defn          :DEF_NAME
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
used_op             =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_defn          :DEF_NAME
                    ;
used_name_id        =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_defn          :DEF_NAME
                    ;
attribute           =>
                    => as_name          :NAME
                    => as_used_name_id  :used_name_id
                    => as_exp           :EXP
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
selected            =>
                    => as_name          :NAME
                    => as_designator    :DESIGNATOR
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
function_call       =>
                    => as_name          :NAME
                    => as_general_assoc_s :general_assoc_s
                    => lx_srcpos        :Source_Position
                    => lx_prefix        :BOOLEAN
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    => sm_normalized_param_s
                    :exp_s
                    ;
indexed             =>
                    => as_name          :NAME
                    => as_exp_s         :exp_s
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    ;
slice               =>
                    => as_name          :NAME
                    => as_discrete_range :DISCRETE_RANGE
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    ;
all                 =>
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    ;
```

GENERAL_ASSOC > EXP > EXP_EXP

```
qualified_allocator =>
                    => as_qualified     :qualified
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    ;
subtype_allocator   =>
                    => as_subtype_indication
                    :subtype_indication
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_desig_type    :TYPE_SPEC
                    ;
aggregate           =>
                    => as_general_assoc_s :general_assoc_s
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_discrete_range :DISCRETE_RANGE
                    => sm_normalized_comp_s
                    :general_assoc_s
                    ;
string_literal      =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_exp_type      :TYPE_SPEC
                    => sm_discrete_range :DISCRETE_RANGE
                    ;
numeric_literal     =>
                    => lx_srcpos        :Source_Position
                    => lx_numrep        :Number_Rep
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
null_access         =>
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
short_circuit       =>
                    => as_exp1          :EXP
                    => as_short_circuit_op :SHORT_CIRCUIT_OP
                    => as_exp2          :EXP
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
parenthesized       =>
                    => as_exp           :EXP
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
conversion          =>
                    => as_exp           :EXP
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
                    => sm_value         :Value
                    ;
qualified           =>
                    => as_exp           :EXP
                    => as_name          :NAME
                    => lx_srcpos        :Source_Position
                    => sm_exp_type      :TYPE_SPEC
```

	=> sm_value	:Value
	;	
range_membership	=>	
	=> as_exp	:EXP
	=> as_membership_op	:MEMBERSHIP_OP
	=> as_range	:RANGE
	=> lx_srcpos	:Source_Position
	=> sm_exp_type	:TYPE_SPEC
	=> sm_value	:Value
	;	
type_membership	=>	
	=> as_exp	:EXP
	=> as_membership_op	:MEMBERSHIP_OP
	=> as_name	:NAME
	=> lx_srcpos	:Source_Position
	=> sm_exp_type	:TYPE_SPEC
	=> sm_value	:Value
	;	
	SHORT_CIRCUIT_OP	
and_then	=>	
	=> lx_srcpos	:Source_Position
	;	
or_else	=>	
	=> lx_srcpos	:Source_Position
	;	
	MEMBERSHIP_OP	
in_op	=>	
	=> lx_srcpos	:Source_Position
	;	
not_in	=>	
	=> lx_srcpos	:Source_Position
	;	

TYPE_SPEC

```
universal_integer   =>
                    ;
universal_fixed     =>
                    ;
universal_real      =>
                    ;
incomplete          =>
                    => sm_discriminant_s    :dscrmt_decl_s
                    => xd_source_name       :SOURCE_NAME
                    => xd_full_type_spec    :TYPE_SPEC
                    ;
```

SCALAR

```
scalar_s            =>
                    => as_list              :SCALAR
                    => lx_srcpos            :Source_Position
                    ;
enumeration         =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_range             :RANGE
                    => sm_literal_s         :enum_literal_s
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    ;

Integer             =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_range             :RANGE
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    => cd_offset            :Integer
                    => cd_impl_size         :Integer
                    ;
fixed               =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_range             :RANGE
                    => sm_accuracy          :Value
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    => cd_impl_small        :Value
                    => cd_impl_size         :Integer
                    ;
float               =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_range             :RANGE
                    => sm_accuracy          :Value
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    ;
```

CONSTRAINED

```
constrained_record  =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_depends_on_dscrmt
                    :BOOLEAN
                    => sm_normalized_dscrmt_s
                    :exp_s
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    => cd_alignment         :Integer
                    ;
constrained_array   =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_depends_on_dscrmt
                    :BOOLEAN
                    => sm_index_subtype_s   :scalar_s
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    => cd_alignment         :Integer
                    => cd_offset            :Integer
                    => cd_dimensions        :Integer
                    ;
constrained_access  =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_depends_on_dscrmt
                    :BOOLEAN
                    => sm_desig_type        :TYPE_SPEC
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    => cd_impl_size         :Integer
                    => cd_alignment         :Integer
                    ;
record              =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_size              :EXP
                    => sm_is_limited        :BOOLEAN
                    => sm_is_packed         :BOOLEAN
                    => sm_discriminant_s    :dscrmt_decl_s
                    => sm_comp_list         :comp_list
                    => sm_representation    :REP
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    ;
array               =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_size              :EXP
                    => sm_is_limited        :BOOLEAN
                    => sm_is_packed         :BOOLEAN
                    => sm_index_s           :index_s
                    => sm_comp_type         :TYPE_SPEC
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
                    => cd_compiled          :BOOLEAN
                    ;
access              =>
                    => sm_derived           :TYPE_SPEC
                    => sm_is_anonymous      :BOOLEAN
                    => sm_base_type         :TYPE_SPEC
                    => sm_size              :EXP
                    => sm_storage_size      :EXP
                    => sm_is_controlled     :BOOLEAN
                    => sm_desig_type        :TYPE_SPEC
                    => sm_master            :ALL_DECL
                    => xd_source_name       :SOURCE_NAME
                    => cd_comp_unit         :Integer
                    => cd_level             :Integer
```

```
                        => cd_compiled          :BOOLEAN
                        => cd_offset            :Integer
                        => cd_constrained       :BOOLEAN
                        ;
private                 =>
                        => sm_derived           :TYPE_SPEC
                        => sm_is_anonymous      :BOOLEAN
                        => sm_discriminant_s    :dscrmt_decl_s
                        => sm_type_spec         :TYPE_SPEC
                        => xd_source_name       :SOURCE_NAME
                        ;
l_private               =>
                        => sm_derived           :TYPE_SPEC
                        => sm_is_anonymous      :BOOLEAN
                        => sm_discriminant_s    :dscrmt_decl_s
                        => sm_type_spec         :TYPE_SPEC
                        => xd_source_name       :SOURCE_NAME
                        ;
task_spec               =>
                        => sm_derived           :TYPE_SPEC
                        => sm_is_anonymous      :BOOLEAN
                        => sm_decl_s            :decl_s
                        => sm_body              :BODY
                        => sm_address           :EXP
                        => sm_size              :EXP
                        => sm_storage_size      :EXP
                        => xd_source_name       :SOURCE_NAME
                        => cd_comp_unit         :Integer
                        => cd_level             :Integer
                        => cd_compiled          :BOOLEAN
                        => xd_stub              :stub
                        => xd_body              :SUBUNIT_BODY
                        ;
real_val                =>
                        => xd_numer             :num_val
                        => xd_denom             :num_val
                        ;
trans_with              =>
                        => tw_filename          :txtrep
                        => tw_comp_unit         :compilation_unit
                        ;
lib_info                =>
                        => xd_short             :txtrep
                        => xd_primary           :txtrep
                        => xd_secondary         :txtrep
                        ;
def                     =>
                        => xd_header            :HEADER
                        => xd_source_name       :SOURCE_NAME
                        => xd_region_def        :def
                        => xd_is_in_spec        :BOOLEAN
                        => xd_lex_level         :Integer
                        => xd_is_used           :BOOLEAN
                        ;
any_access              =>
                        ;
any_composite           =>
                        ;
any_string              =>
                        ;
any_access_of           =>
                        => xd_item              :ITEM
                        ;
any_integer             =>
                        ;
any_real                =>
                        ;
implicit_conv           =>
                        => xd_item              :ITEM
                        => xd_list              :EXP
                        ;
nullary_call            =>
                        => xd_item              :ITEM
                        ;
```

DEF_NAME > SOURCE_NAME

```
source_name_s       =>
                    => as_list          :SOURCE_NAME
                    => lx_srcpos        :Source_Position
                    ;

variable_id         =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_renames_obj   :BOOLEAN
                    => sm_address       :EXP
                    => sm_is_shared     :BOOLEAN
                    => xd_region        :SOURCE_NAME
                    => cd_comp_unit     :Integer
                    => cd_level         :Integer
                    => cd_offset        :Integer
                    => cd_compiled      :BOOLEAN
                    ;
constant_id         =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_renames_obj   :BOOLEAN
                    => sm_address       :EXP
                    => sm_first         :DEF_NAME
                    => xd_region        :SOURCE_NAME
                    => cd_comp_unit     :Integer
                    => cd_level         :Integer
                    => cd_offset        :Integer
                    => cd_compiled      :BOOLEAN
                    ;
number_id           =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => xd_region        :SOURCE_NAME
                    ;
component_id        =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_comp_rep      :COMP_REP_ELEM
                    => xd_region        :SOURCE_NAME
                    ;
discriminant_id     =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_comp_rep      :COMP_REP_ELEM
                    => xd_region        :SOURCE_NAME
                    ;
in_id               =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_first         :DEF_NAME
                    => xd_region        :SOURCE_NAME
                    => cd_level         :Integer
                    => cd_offset        :Integer
                    ;
in_out_id           =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_first         :DEF_NAME
                    => xd_region        :SOURCE_NAME
                    => cd_level         :Integer
                    => cd_addr_offset   :Integer
                    => cd_val_offset    :Integer
                    ;
out_id              =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_init_exp      :EXP
                    => sm_first         :DEF_NAME
                    => xd_region        :SOURCE_NAME
                    => cd_level         :Integer
                    => cd_addr_offset   :Integer
                    => cd_val_offset    :Integer
                    ;
enum_literal_s      =>
                    => as_list          :ENUM_LITERAL
                    => lx_srcpos        :Source_Position
                    => cd_alignment     :Integer
                    => cd_impl_size     :Integer
                    => cd_last          :Integer
                    ;
```

ENUM_LITERAL

```
enumeration_id      =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_pos           :Integer
                    => sm_rep           :Integer
                    => xd_region        :SOURCE_NAME
                    ;
character_id        =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => sm_pos           :Integer
                    => sm_rep           :Integer
                    => xd_region        :SOURCE_NAME
                    ;
iteration_id        =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_obj_type      :TYPE_SPEC
                    => xd_region        :SOURCE_NAME
                    => cd_level         :Integer
                    => cd_offset        :Integer
                    ;
type_id             =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_type_spec     :TYPE_SPEC
                    => sm_first         :DEF_NAME
                    => xd_region        :SOURCE_NAME
                    ;
subtype_id          =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_type_spec     :TYPE_SPEC
                    => xd_region        :SOURCE_NAME
                    ;
private_type_id     =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_type_spec     :TYPE_SPEC
                    => xd_region        :SOURCE_NAME
                    ;
l_private_type_id   =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_type_spec     :TYPE_SPEC
                    => xd_region        :SOURCE_NAME
                    ;
procedure_id        =>
                    => lx_srcpos        :Source_Position
                    => lx_symrep        :symbol_rep
                    => sm_first         :DEF_NAME
                    => sm_spec          :HEADER
                    => sm_unit_desc     :UNIT_DESC
                    => sm_address       :EXP
                    => sm_is_inline     :BOOLEAN
                    => sm_interface     :PREDEF_NAME
```

	=> xd_region	:SOURCE_NAME
	=> xd_stub	:stub
	=> xd_body	:SUBUNIT_BODY
	=> cd_compiled	:BOOLEAN
	=> cd_level	:Integer
	=> cd_label	:Integer
	=> cd_param_size	:Integer
	;	
function_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_first	:DEF_NAME
	=> sm_spec	:HEADER
	=> sm_unit_desc	:UNIT_DESC
	=> sm_address	:EXP
	=> sm_is_inline	:BOOLEAN
	=> sm_interface	:PREDEF_NAME
	=> xd_region	:SOURCE_NAME
	=> xd_stub	:stub
	=> xd_body	:SUBUNIT_BODY
	=> cd_compiled	:BOOLEAN
	=> cd_level	:Integer
	=> cd_label	:Integer
	=> cd_param_size	:Integer
	=> cd_result_size	:Integer
	;	
operator_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_first	:DEF_NAME
	=> sm_spec	:HEADER
	=> sm_unit_desc	:UNIT_DESC
	=> sm_address	:EXP
	=> sm_is_inline	:BOOLEAN
	=> sm_interface	:PREDEF_NAME
	=> xd_region	:SOURCE_NAME
	=> xd_stub	:stub
	=> xd_body	:SUBUNIT_BODY
	=> cd_compiled	:BOOLEAN
	=> cd_level	:Integer
	=> cd_label	:Integer
	=> cd_param_size	:Integer
	=> xd_not_equal	:operator_id
	;	
package_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_first	:DEF_NAME
	=> sm_spec	:HEADER
	=> sm_unit_desc	:UNIT_DESC
	=> sm_address	:EXP
	=> xd_region	:SOURCE_NAME
	=> xd_stub	:stub
	=> xd_body	:SUBUNIT_BODY
	=> cd_compiled	:BOOLEAN
	;	
generic_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_first	:DEF_NAME
	=> sm_spec	:HEADER
	=> sm_generic_param_s	:item_s
	=> sm_body	:BODY
	=> sm_is_inline	:BOOLEAN
	=> xd_region	:SOURCE_NAME
	=> xd_stub	:stub
	=> xd_body	:SUBUNIT_BODY
	;	
task_body_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_first	:DEF_NAME
	=> sm_type_spec	:TYPE_SPEC
	=> sm_body	:BODY
	=> xd_region	:SOURCE_NAME
	;	
label_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_stm	:STM
	=> xd_region	:SOURCE_NAME
	=> cd_label	:Integer
	;	
block_loop_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_stm	:STM
	=> xd_region	:SOURCE_NAME
	;	
entry_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_spec	:HEADER
	=> sm_address	:EXP
	=> xd_region	:SOURCE_NAME
	;	
exception_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_renames_exc	:NAME
	=> xd_region	:SOURCE_NAME
	=> cd_label	:Integer
	;	

DEF_NAME > PREDEF_NAME

attribute_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> xd_pos	:Integer
	;	
pragma_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
!! VERIFIER SEQ ? !!	=> sm_argument_id_s	:argument_id
	=> xd_pos	:Integer
	;	
argument_id_s	=>	
	=> as_list	:argument_id
	=> lx_srcpos	:Source_Position
	;	
argument_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> xd_pos	:Integer
	;	
bltn_operator_id	=>	
	=> lx_srcpos	:Source_Position
	=> lx_symrep	:symbol_rep
	=> sm_operator	:Integer
	;	

UNIT_DESC

implicit_not_eq	=>	
	=> lx_srcpos	:Source_Position
	=> sm_equal	:SOURCE_NAME
	;	
derived_subprog	=>	
	=> lx_srcpos	:Source_Position
	=> sm_derivable	:SOURCE_NAME
	;	

explications compilation_unit :

Le champ « *as_all_decl* » de type classe ALL_DECL ne contient pas de liste mais seulement le premier élément ITEM représentant l'unité de compilation.
Les listes de déclarations et d'instructions sont contenues plus bas dans des listes d'ITEM attribuées aux spécifications de package (HEADER) ou aux BODY.

Au sujet des unités de compilation, il faut se reporter à la section RM-10.1 du manuel de référence Ada.

unité de compilation::=		
	clause de contexte | unité de librairie	
	clause de contexte | unité secondaire	
unité de librairie::=		
	déclaration de sous-programme	procedure X (...) ; function Y (...) ;
	déclaration de package	package X is ... end X ;
	déclaration de package ou sous-programme générique	generic ... procedure GP (...) ; generic ... function GF (...) ; generic ... package GP is ... end GP;
	instantiation de générique	procedure IP is new GP (...) ; function IF is new GF (...) ; package IP is new GP (...) ;
	corps de sous-programme	procedure P (...) is ... begin ... end P ; function F (...) is ... begin ... end F; subprogram_body
unité secondaire::=		
	corps d'unité de librairie	procedure P (...) is ... begin ... end P ; function F (...) is ... begin ... end F; package body K is ... end K ;
	sous-unité	separate (X) package body Y is ... end Y ;

(retour)

explications address :

La clause d'adressage RM-13.5 sert à imposer une adresse définie à un objet. Elle s'écrit :
for MA_VARIABLE use at ...

(retour)

explications record_rep :

La clause de représentation d'enregistrement RM-13.4 s'écrit :

for ENREGISTREMENT use record at mod ...

(retour)

explications_deferred_constant_decl :

RM-7.4

(retour)

explications number_decl :
RM-3.2.2

(retour)