### 15.6.5 Referencing **union** alternatives

Both templates and template variables allow referencing alternatives inside a union template definition using the dot notation. However, the referenced alternative may belong to template field containing a matching mechanism. This clause provides rules for such cases.

a) Omit, AnyValueOrNone, template lists and complemented lists: referencing an alternative of a union template field to which Omit, AnyValueOrNone, a template list or a complemented list is assigned, at the right hand side of an assignment, shall cause an error.
When referencing an alternative of a union template field to which AnyValueOrNone or omit is assigned, at the left hand side of an assignment, the template field is implicitly set to be present and the referenced alternative becomes the chosen one. If the referenced alternative is not the last item in the reference, all rules in Clause 15.6 valid for AnyValue shall apply recursively for further expansion. After this expansion the value or matching mechanism at the right hand side of the assignment shall be assigned to the referenced subfield.
Referencing an alternative of a union template field to which template lists or complemented template lists are assigned, at the left hand side of an assignment, shall cause an error.

EXAMPLE 1:

 **type record** R1 {

 **integer** f1,

 **integer** f2

 }

 **type union** U {

 **integer** c1,

 R1 c2

 }

 **type record** R2 {

 **integer** g1,

 U g2 **optional**

 }

 :

 **var template** R2 mw\_t1 := {

 g1 := 5,

 g2 := **\***

 }

 **var template integer** mw\_t2;

 mw\_t1.g2.f1 := 1;

 // after the assignment mw\_t2.g2 is { g2 := { f1 := 1, f2 := ? } }

 mw\_t1.g2 := omit;

 mw\_t2 := mw\_1.g2.c1;

 // causes an error as **omit** is assigned to mw\_1.g2

b) AnyValue: when referencing an alternative of a union template field to which AnyValue is assigned, at the right hand side of an assignment, AnyValue shall be returned.
When referencing an alternative of a union template field to which AnyValue is assigned, at the left hand side of an assignment, the referenced alternative becomes the chosen one. If the referenced alternative is not the last item in the reference, all rules in Clause 15.6 valid for AnyValue shall apply recursively for further expansion. After this expansion the value or matching mechanism at the right hand side of the assignment shall be assigned to the referenced subfield.

EXAMPLE 2:

 **var template** U mw\_t3 := ?;

 mw\_t2 := mw\_t3.c1;

 // after the assignment mw\_t2 will be ?

 mw\_t3.c1.f1 := 1;

 // after the assignment mw\_t3 will be { c1 := { f1 := 1, f2 := ? } }

c) Ifpresent attribute: referencing an alternative of a union template field to which the ifpresent attribute is attached, shall cause an error (irrespective of the value or the matching mechanism to which **ifpresent** is appended).