Core issue 743: decltype(...) name qualifiers

Notes
The wording changes proposed in this paper address national body comment JP 8 (Core issue 743). The changes are against N2960.

Wording Changes
In 3.4.3 [basic.lookup.qual] paragraph 1 change the first two sentences

The name of a class or namespace member or enumerator can be referred to after the :: scope resolution operator (5.1) applied to a nested-name-specifier that nominates its class, namespace, or enumeration. During the lookup for a name preceding the :: scope resolution operator, object, function, and enumerator names are ignored.

to

The name of a class or namespace member or enumerator can be referred to after the :: scope resolution operator (5.1) applied to a nested-name-specifier that denotes its class, namespace, or enumeration. If a :: scope resolution operator in a nested-name-specifier is not preceded by a decltype-specifier, lookup of the name preceding that :: considers only namespaces, types, and templates whose specializations are types.

Add a production to the grammar rule for nested-name-specifier in 5.1.1 [expr.prim.general] paragraph 6 as follows

6 ... nested-name-specifier:

   type-name ::
   namespace-name ::

   decltype-specifier :
   nested-name-specifier identifier ::
   nested-name-specifier template_{opt} simple-template-id ::

Change the first sentence following this grammar rule from

A nested-name-specifier that names a class, optionally followed by the keyword template ...

to
A nested-name-specifier that denotes a class, optionally followed by the keyword template ...

In 5.1.1 [expr.prim.general] paragraph 8 change the first sentence from

8 A nested-name-specifier that names an enumeration ...

to

8 A nested-name-specifier that denotes an enumeration ...

In 7.1.6.2 [dcl.type.simple] paragraph 1 replace the production

    simple-type-specifier:

    ...

    decltype ( expression )

by

    simple-type-specifier:

    ...

    decltype-specifier

and add the following rule:

    decltype-specifier:

    decltype ( expression )

In 8.3.1 [dcl.meaning] paragraph 1 insert the following sentence before the note:

The nested-name-specifier of a qualified declarator-id shall not begin with a decltype-specifier.

In 8.3.3 [dcl.mptr] paragraph 1 change the phrase

    the nested-name-specifier names a class

by

    the nested-name-specifier denotes a class

(one occurrence).

In 11.2 [class.access.base] paragraph 5 change the phrase

    class named by the nested-name-specifier

by

    class denoted by the nested-name-specifier
(one occurrence).

In 11.5 [class.protected] paragraph 1 change the phrase

the nested-name-specifier shall name

by

the nested-name-specifier shall denote

(one occurrence).

In 12.9 [class.inhctor] paragraph 8 change the phrase

the base class named in the nested-name-specifier

by

the base class denoted by the nested-name-specifier

(one occurrence).

In 14.7.2.4 [temp.dep.temp] change paragraph 4

4 A template template-argument is dependent if it names a template-parameter or is a
qualified-id with a nested-name-specifier which contains a class-name that names a
dependent type.

to

4 A template template-argument is dependent if it names a template-parameter or is a
qualified-id with a nested-name-specifier which contains a class-name or a decltype-
specifier that denotes a dependent type.