Nested Namespace Definition (rev 1)

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Summary

EWG did meet and discuss N4026 in Rapperswil, including each of the open issues. Several different votes were taken. By far the strongest consensus was for just the basic facility with no attributes, no aliases and no inline:

SF: 11 F: 5 N: 3 A: 0 SA: 0

Furthermore, if it is implemented in this configuration, these extra features can always be added later by a separate proposal.

We therefore formally propose that the following wording corresponding to the “basic facility” be added to the working draft:

Wording

(A) Add to [namespace.def] and [gram.dcl]:

namespace-definition:
    named-navigation-definition
    unnamed-navigation-definition
    nested-navigation-definition

    nested-navigation-definition:
        namespace nested-navigation-specifier :: identifier { namespace-body }

    nested-navigation-specifier:
        identifier
        nested-navigation-specifier :: identifier

(B) Add new paragraph to [namespace.def]:

A nested-namespace-definition with a nested-namespace-specifier \( N \), identifier \( I \) and namespace-body \( B \) is identical (by definition) to namespace \( N \{ \text{namespace} \ I \{ \ B \} \} \)

Consequences

The only minor issue not discussed was name lookup.

Currently this doesn’t work:

```
namespace A { }
using namespace B = A;
namespace B { } // ill-formed: B isn’t a namespace-name
```

and so neither does this:

```
namespace A { namespace C {} }
using namespace B = A;
namespace B { namespace C {} } // ill-formed: B isn’t a
// namespace-name
```

So we think this shouldn’t work either:

```
namespace A::C {}
using namespace B = A;
namespace B::C {} // ill-formed by wording: B isn’t a
// namespace-name
```

By the wording, namespace \( B::C \) does not entail a name lookup, it is purely a syntactic short-cut for namespace \( B \{ \text{namespace} \ C \}

We think the wording matches what EWG was voting on as “the basic feature”, but want to do one final checking phase at Urbana before proceeding to Core.