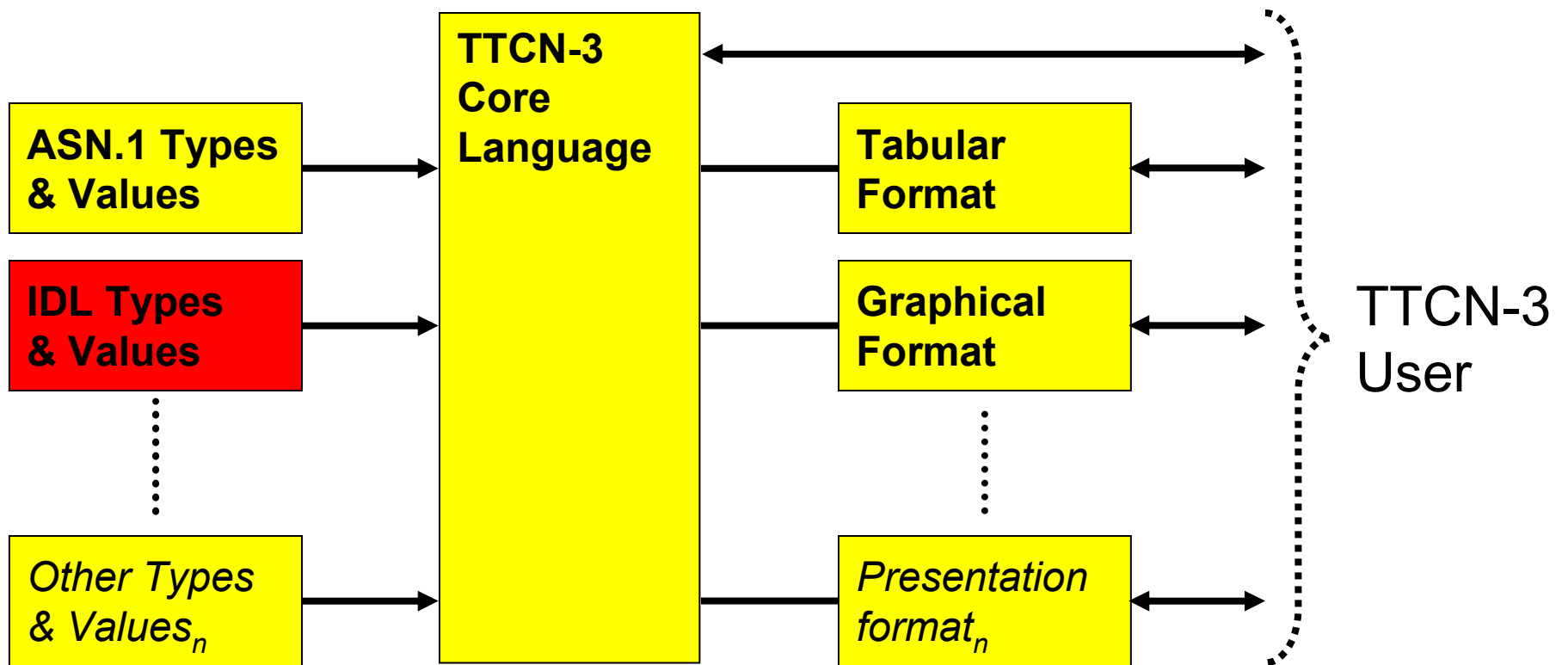# The IDL to TTCN-3 Mapping

Michael Ebner
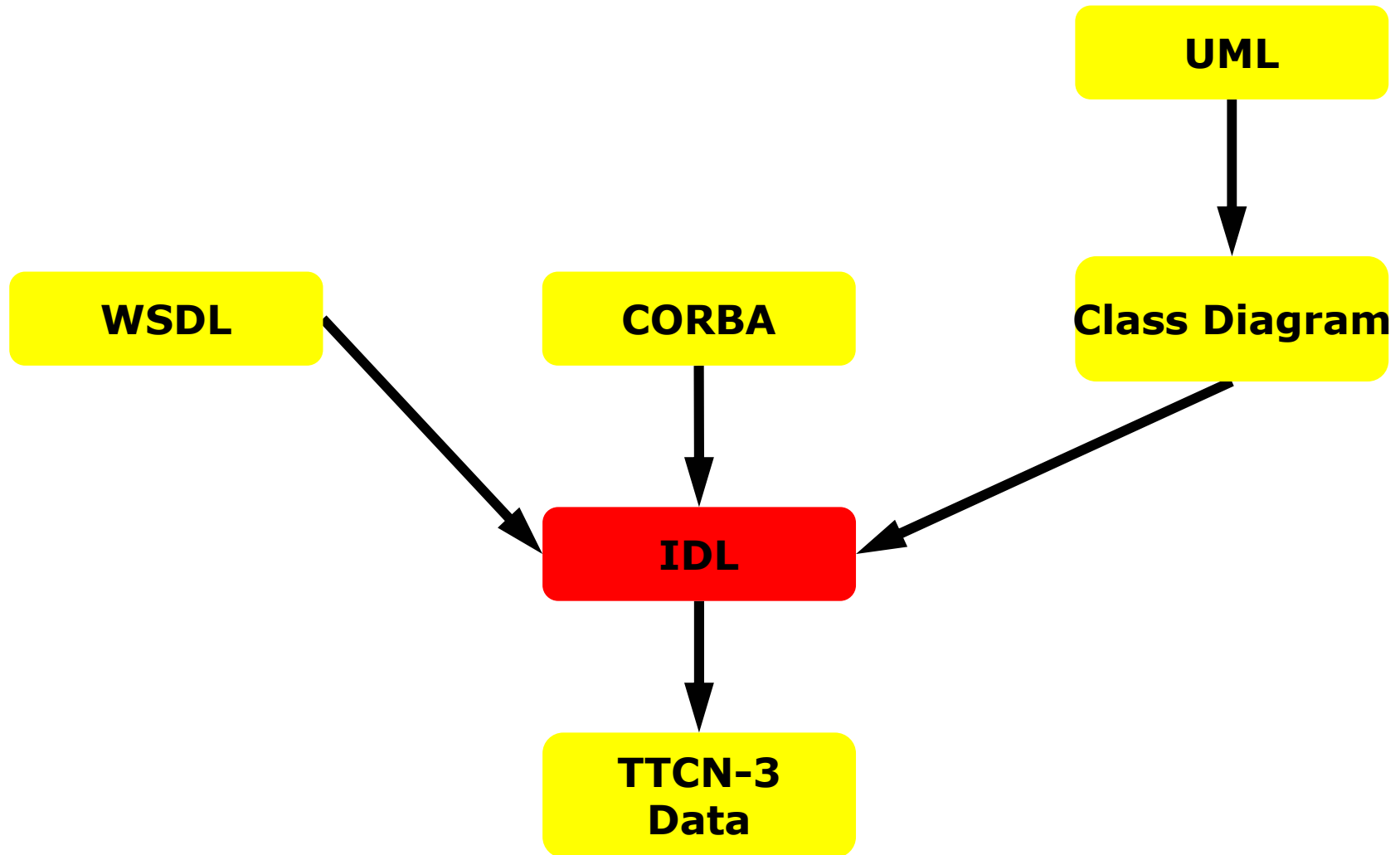
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TTCN-3 User Conference 2004

Overall Picture of TTCN-3

Applications of the IDL Mapping

IDL Example

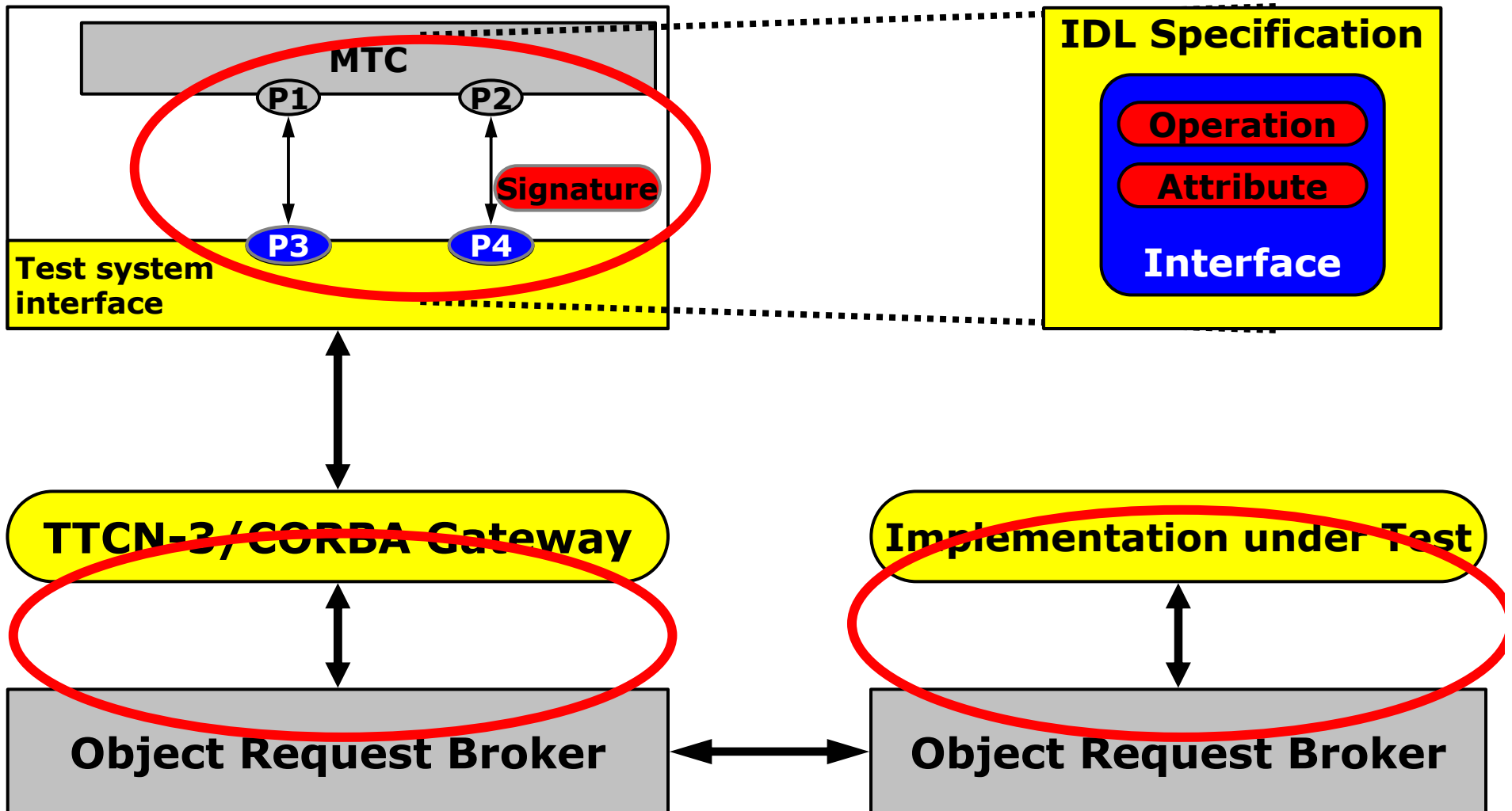```
const long number = 12;
const long size = ((number << 3) % 0x1F) & 0123;
typedef sequence < string > Names;

interface Naming {
  attribute string object_type;
  readonly attribute Names myNames;

  exception NotFound { string why; string name; };

  long bind(in Name n, inout Object o, out Object mo)
      raises (NotFound)
      context (MyContextVariable);
};
```

# Testing CORBA with TTCN-3



MTC

P1　　P2

Signature

P3　　P4

Test system interface

IDL Specification

Operation

Attribute

Interface

TTCN-3/CORBA Gateway

Implementation under Test

Object Request Broker

Object Request Broker

# IDL and TTCN-3 Data Types

| Basic | | Constructed | | Template | | Other | |
|---|---|---|---|---|---|---|---|
| boolean | boolean | struct | record | sequence | record of | array | array |
| char | char | union | union | string | charstring | native | address |
| wchar | universal char | enum | enumerated | wstring | universal charstring | | |

| | | | | | |
|---|---|---|---|---|---|
| octet | octetstring | | | fixed | IDLfixed |
| long | integer long | | | | |
| short | integer short | | | | |
| float | IEEE754float | | | | |
| double | IEEE754double | | | | |
| any | anytype | | | | |

# IDL Interface Mapping

**IDL**

operation

attribute

raise

context

interface
{ name space
interface instance
interface type

**TTCN-3**

signature

set-, get-signature

signature with exception

signature parameter

group + name conventions

port

address

# Example - Data Type Mapping

## IDL

```
module CosNaming {
    typedef sequence<NameComponent> Name;

    exception NotFound { string why; string name; };
};
```

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```
module CosNaming {

    type record of NameComponent Name
         with { variant "IDL v2.6, IDL:sequence" };

     type record NotFound {
       NotFoundReason why, Name rest_of_name };
         with { variant "IDL v2.6, IDL:exception" };
}
```

Example – Interface Mapping

IDL

```
interface NamingContext {
    void bind( in Name n, in address object)
      raises ( NotFound );
};
```

TTCN-3

```
group NamingContextInterface {

  signature bind( in Name n, in address object )
    exception ( NotFound );

  type port NamingContext procedure {
     out bind };

  type address NamingContextObject;
}
```

Summary

- ETSI Technical Specification 102 219
- Support by TTCN-3:
  - ➢ Synchronous communication including non-blocking procedure calls
  - ➢ IDL data types
    - anytype
    - *variant* attribute and "useful types" (*IDLfixed*, *short*, *IEEE754float*, *iso8859string, etc.*)

The IDL to TTCN-3 Mapping

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END