

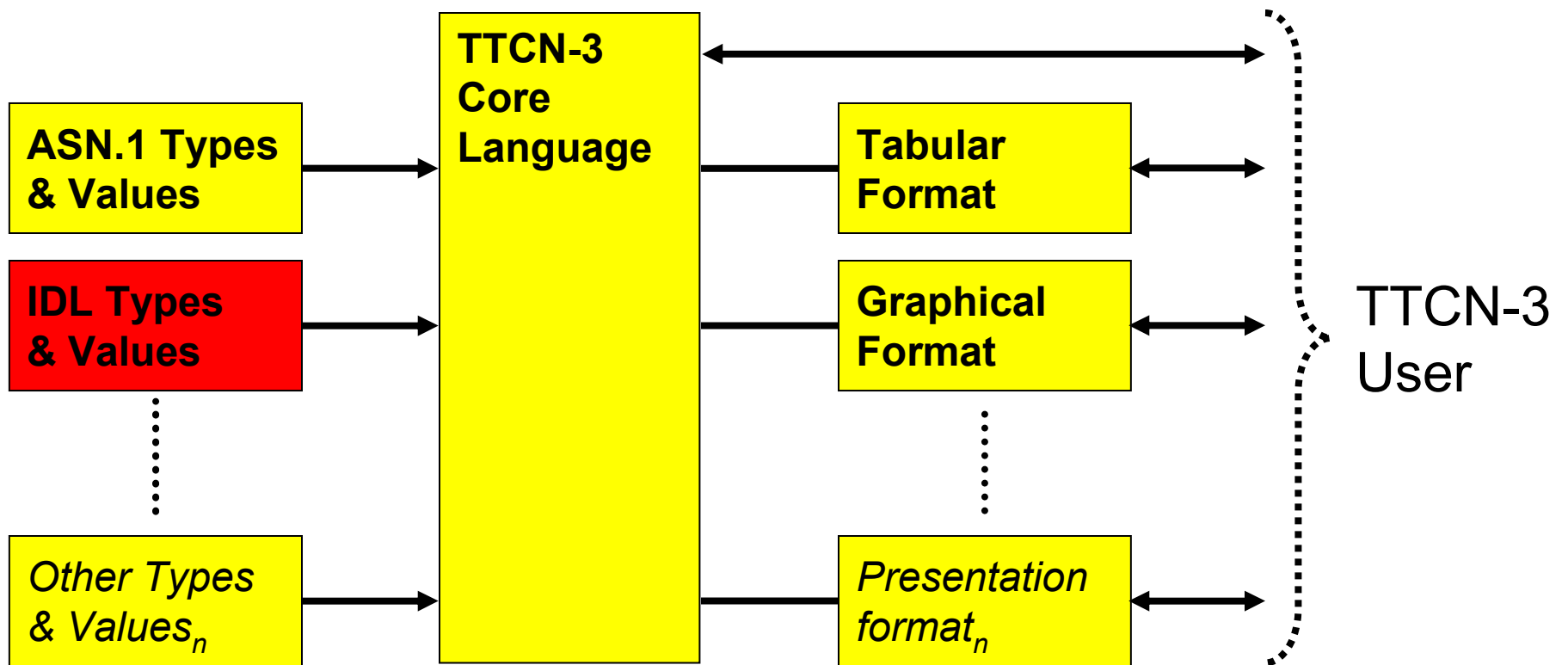
The IDL to TTCN-3 Mapping

Michael Ebner

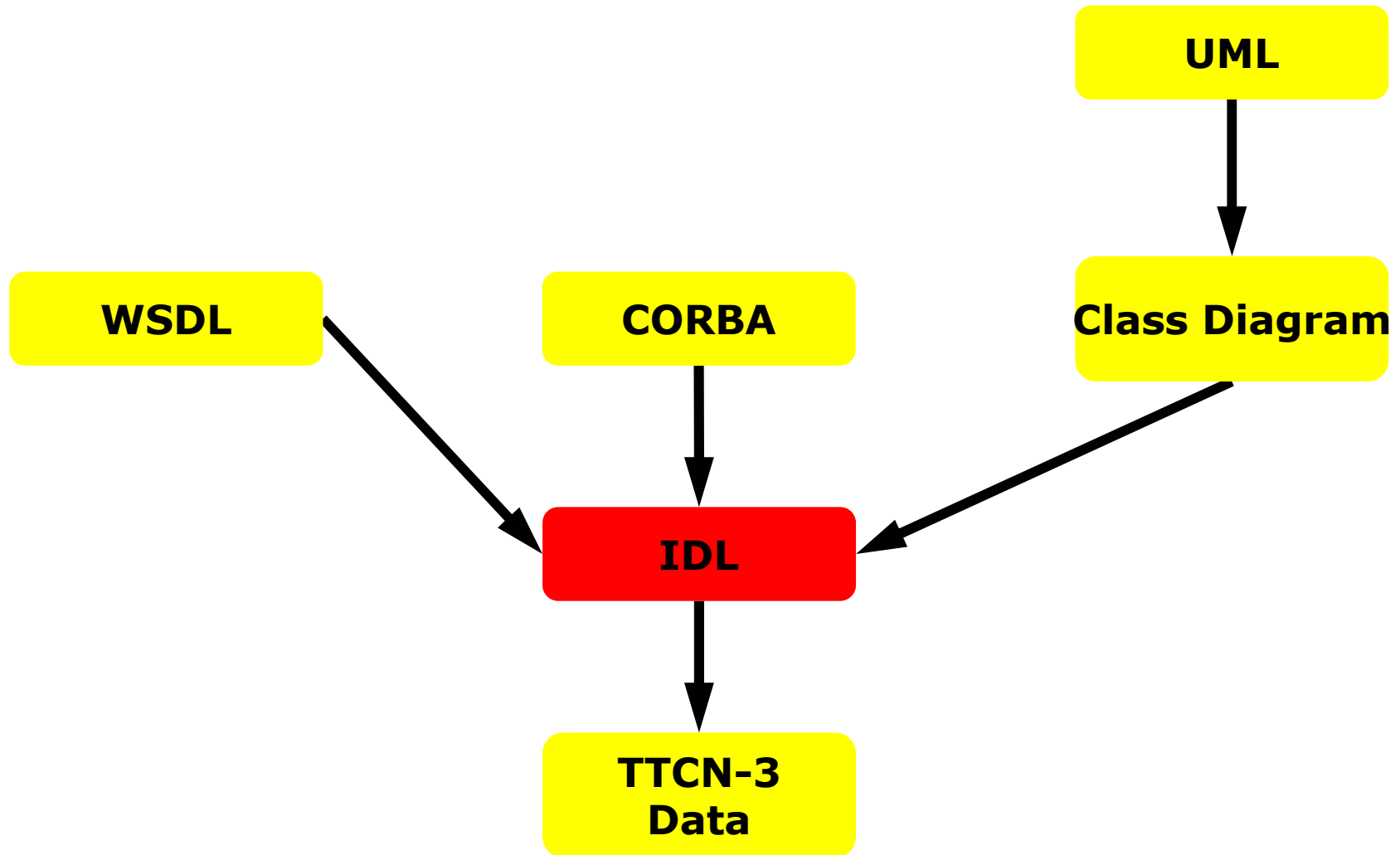
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Overall Picture of TTCN-3



Applications of the IDL Mapping



IDL Example

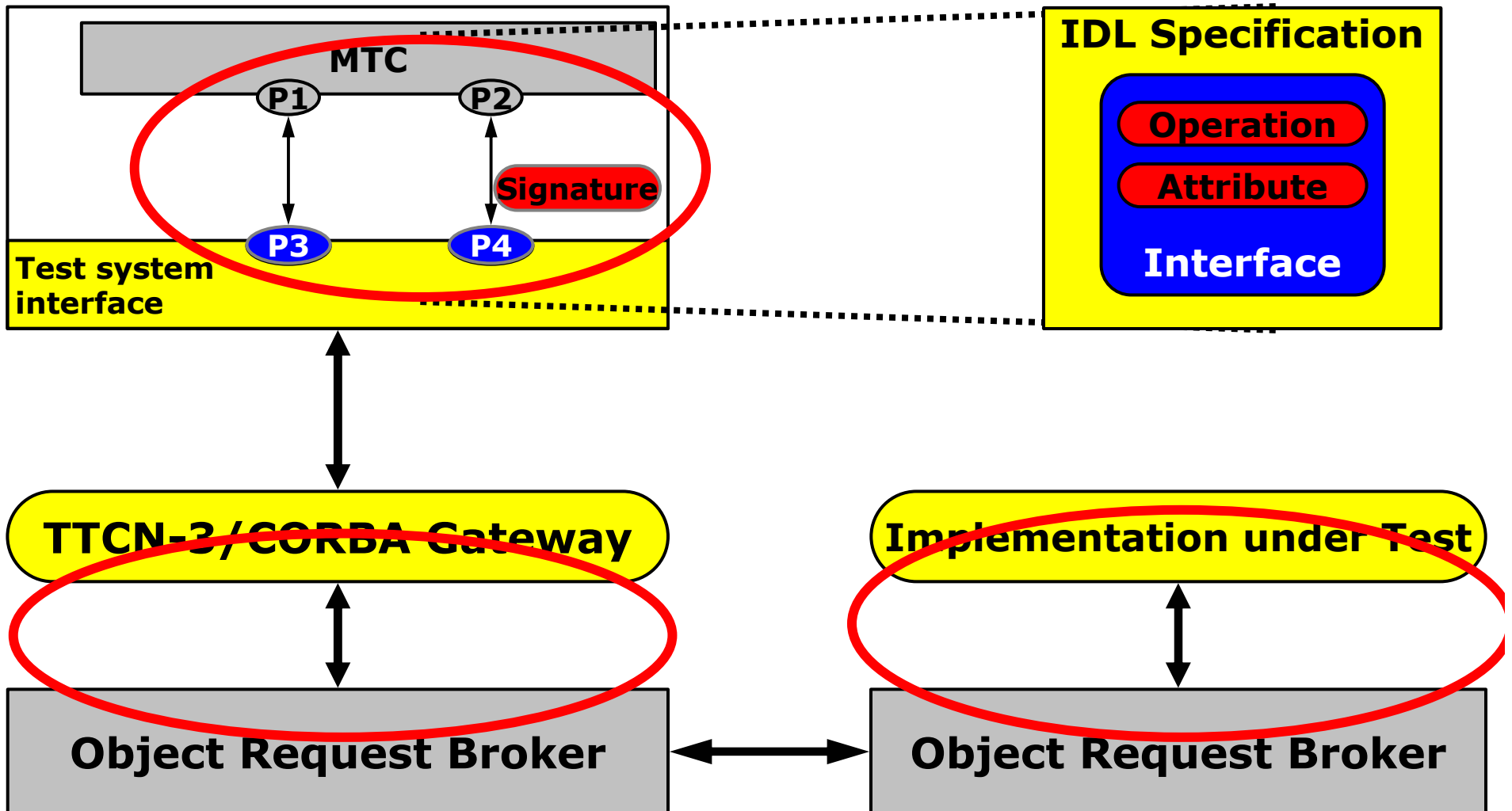
```
const long number = 12;
const long size = ( ( number << 3 ) % 0x1F ) & 0123;
typedef sequence < string > Names;

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



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

~~fixed~~

long ~~integer~~

short ~~integer~~

float ~~float~~ 754float

double ~~float~~ 754double

any ~~anytype~~

IDL Interface Mapping

IDL

operation

attribute

raise

context

interface

{ name space

{ interface instance

{ interface type

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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 );  
};
```

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```
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.)

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END