TDC
(Test Description Code)

CSH version 1.4 - duration 45 min.

TEXAS INSTRUMENTS

TDC (Test Description Code)
Overview

➤What is TDC?

➤User documentation

➤Test tool chain

➤Features

➤Test Structure

➤Test Case definition

➤Example of converted test cases

➤Pratical Requirements

➤Compiling, building and execution

➤Possible future features

TEXAS INSTRUMENTS

TDC (Test Description Code)
What is TDC?

➢ A language for test case specification

➢ It provides a subset of TTCN features

➢ Tests are structured like in TTCN

➢ The code is written in C and compilable with a standard C++ compiler (VS 6 or VS 7)

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TDC (Test Description Code)
User documentation

- ➢ Design documentation (highlevel and lowlevel)
  - ➢ \gpf\util\tap\tdc\doc

- ➢ TDC user guide
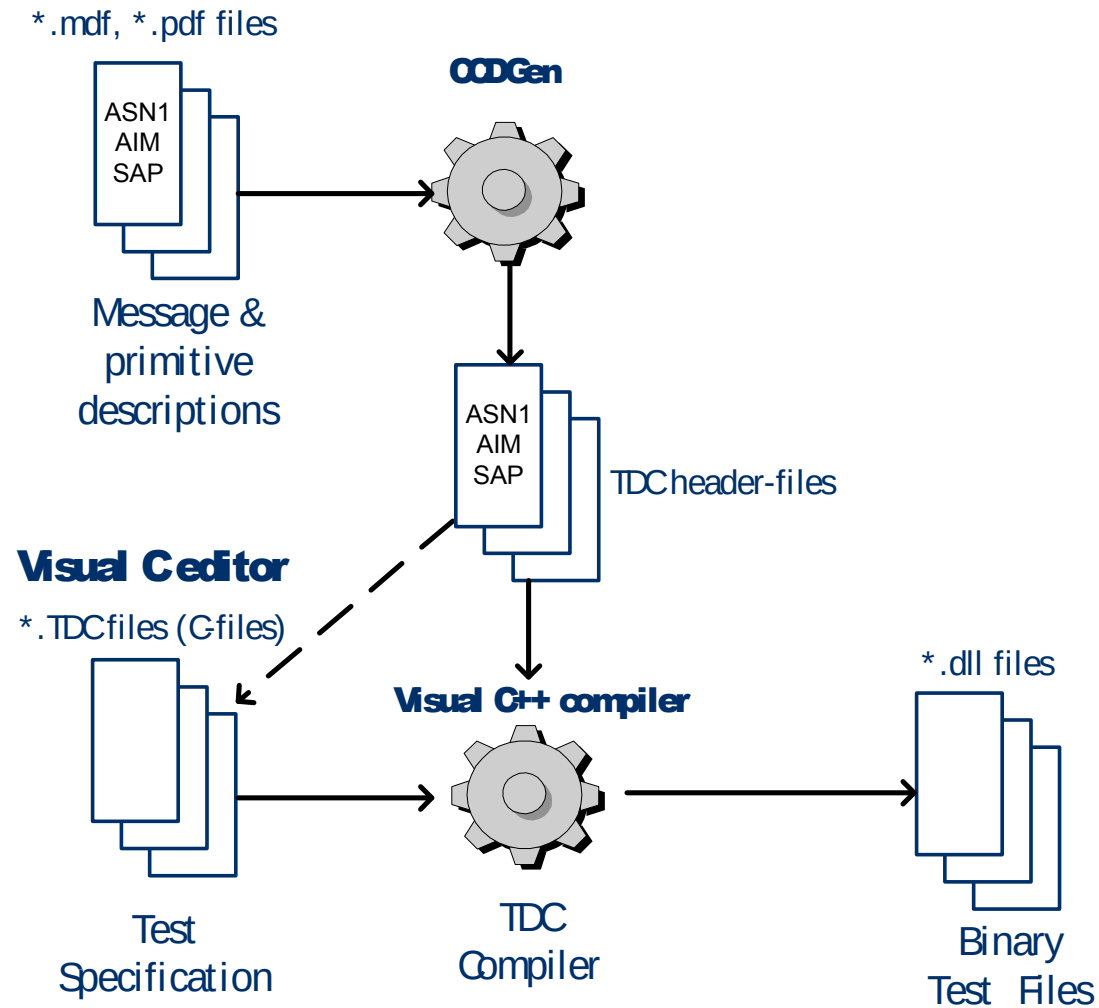 - ➢ \gpf\doc\tdc\8434_510_02_tdc_user_guide.doc

- ➢ TDS to TDC user guide (converter)
  - ➢ \gpf\doc\tdc\8434_513_02_tds_to_tdc_user_guide.doc

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TDC (Test Description Code)
Test tool chain

*.mdf, *.pdf files

CODGen

ASN1
AIM
SAP

Message &
primitive
descriptions

ASN1
AIM
SAP

TDC header-files

Visual C editor

*.TDC files (C-files)

*.dll files

Visual C++ compiler

Test
Specification

TDC
Compiler

Binary
Test Files

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- ➢ Mergeable, C-code
- ➢ Errors discovered compile-time
- ➢ Constraint modularization
- ➢ Constraints parameterization (Like TTCN)
- ➢ Dot completion (context type awareness) (VS6)
- ➢ Member order is not significant
- ➢ Member actions are default SKIP
- ➢ Struct expansion (VS6)
- ➢ TRAP and ONFAIL statements (Like TTCN)
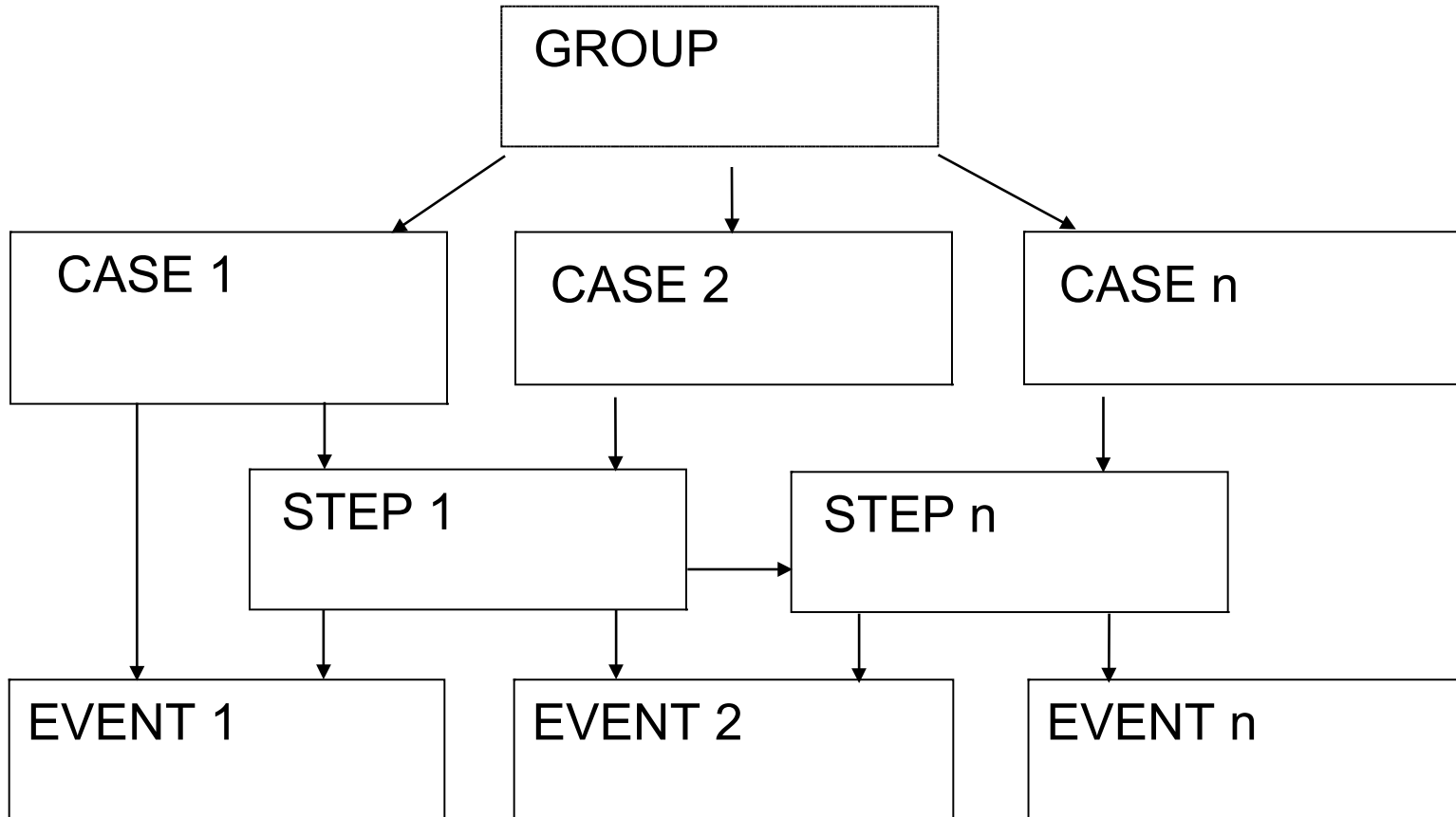- ➢ PCO(src, dst) -> specify and check sender of primitives.

➢ Groups, Cases, Steps and Events (like TTCN):

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➤ Case:

⇨ A case is series of events and/or steps

```
T_CASE RR200()
{
    BEGIN_CASE ("Test something")
    {
        setup_routing();
        SEND ( any_primitive(100) );
     AWAIT ( any_other_primitive() );
     SEND ( any_primitive(200) );
        ……
    }
}
```

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➤ Step:
  ➩ A step is series of events and/or other steps

```
T_STEP setup_routing()
{
    BEGIN_STEP("Setup_routing");
    {
        COMMAND("RR RESET");
                                        SEND(any_other_primitive());
        …………
    }
}
```

➢Event:

  ➢ SEND(), AWAIT(), TIMEOUT(), MUTE(), etc.

  ➢ Primitive specification (assignment of values)

    T_PRIMITIVE_UNION any_primitive(U8 x_int)

    {

        T_ANY_PRIMITIVE any_prim;

        any_prim->my_integer = x_int;
        any_prim->my_struct.struct_member = 20;

        ………

        return any_prim;

    }

➢ CC used as an example

- ➢ Add option "tdclib" when calling makcdg

- ➢ Build xxx_tdc projects (VS6 or mkalltc.bat)

- ➢ Execution and tracing
  - ➢ TAP2
  - ➢ Tapcaller
  - ➢ PCO environment

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Pratical Requirements

- Visual Studio 6 with Service Pack 5
- Config spec:
  - element \g23m\condat\int\bin\... MAKCDG_TDC

  - element /gpf/... TDC_1.1.4_FLOAT
  - element \gpf\BIN\ccdgen.exe CCDGEN_2.3.5
  - element /gpf/... TAP_2.5.5
  - include //hokus/csi/gpf_13b.csi
- Converted documents at \csh_g23m_S200_view_devbr under \g23m\condat\ms\src\XX\test_xx

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- ➢ Test GROUPs

- ➢ Reuse of received constraint values.

- ➢ MUT() -> specify the "Module Under Test".

- ➢ ALT -> alternative sequences (like "if/else" on primitive level)

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- Converted documents:
  - ACI, ACIAAA, ACICC, ACIPHB, ACISAT
  - ALR, GALR
  - FAD, FAX
  - L2R
  - GRR (1-4)
  - DL, RR (Martin S.)
  - SMS
- Documents to convert?
  - CC, MM, SM, SS ++