

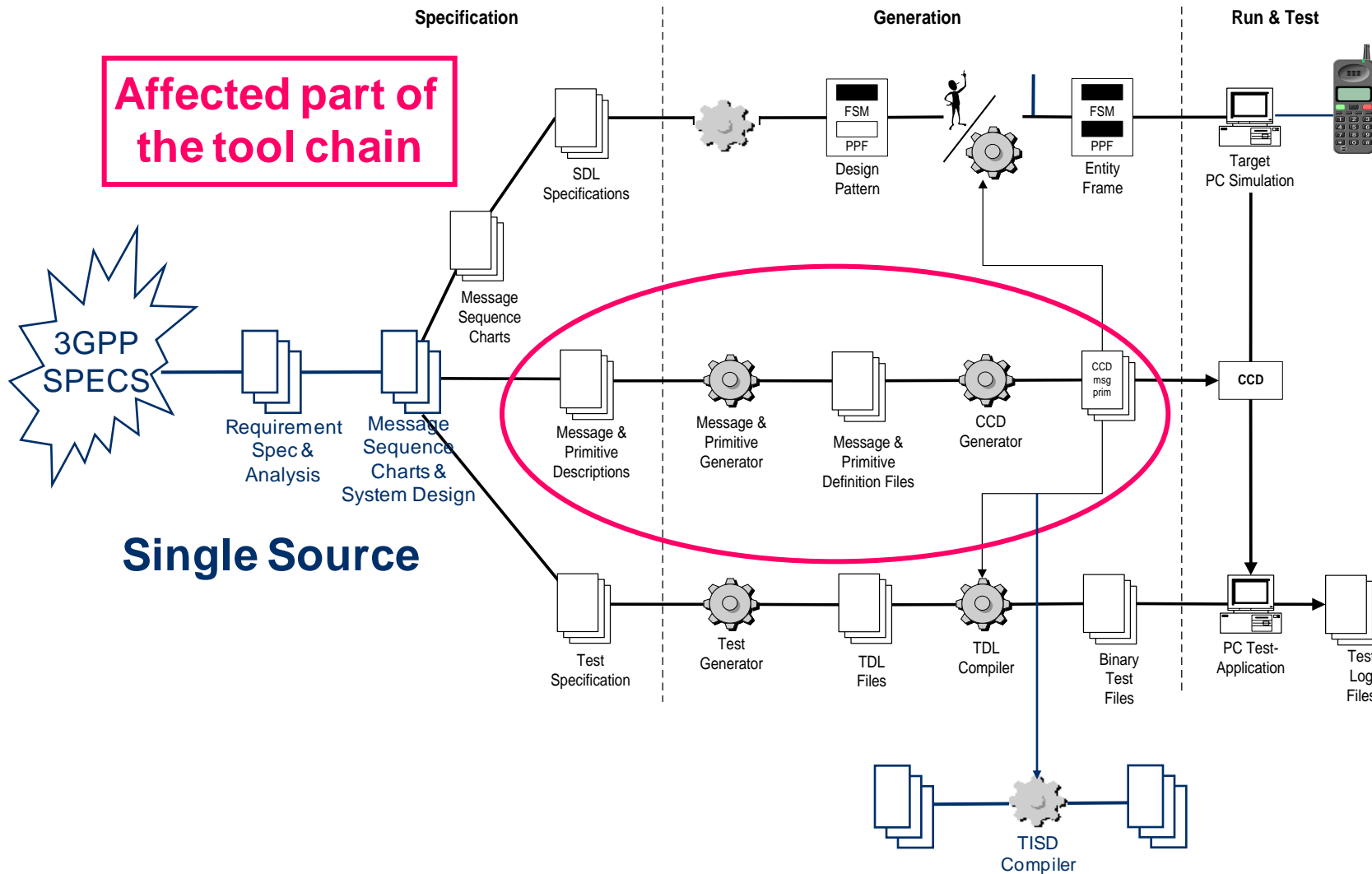
**SAP.doc  
To  
TISD.h and TISD.intf**



***“Nature just loves to improve on itself”***

***Heraclitus***

# Protocol Stack Development Methods

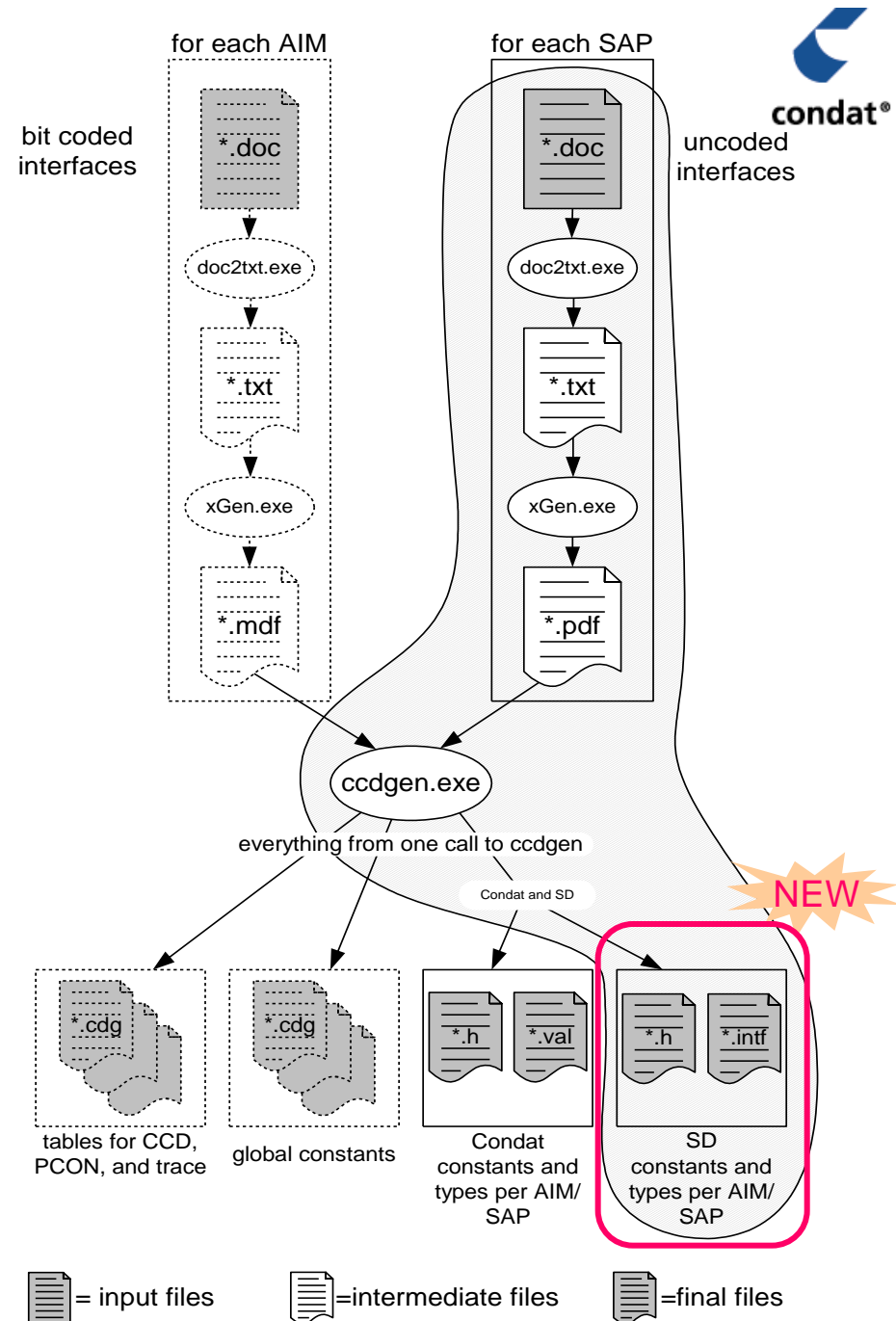


# The SAP compiler chain

The SAP compiler chain contains 3 executables

- antiword (or doc2txt)
  - Equivalent to save as text
- xGen
  - Converts the text file to an structured text format (MDF/PDF)
- Ccdgen
  - Generate h-files for Condat entities
  - and tabs for CCD-lib, Trace and Test tools.
  - Optional generate SDL include files
  - Generate TISD h-files **NEW**

Note: PDF is not to the Adobe acrobat format



Fixed size primitives are in the same format except for comments.

```
#ifndef L1_L1EH_ACTIVATE_REQ_CLASS
#define L1_L1EH_ACTIVATE_REQ_CLASS
/*
 *
 */
typedef struct
{
    Pub_X_StartModulo      startModulo;          /*< 0: 1> Pub_X_StartModulo Start poir
    Uint8                  thresholdIncluded;      /*< 1: 1> valid-flag
    Pub_X_Threshold        threshold;             /*< 2: 3> A set of threshold parameters
    Uint8                  singleUarfcnIncluded;   /*< 5: 1> valid-flag
    Uint16                 singleUarfcn;          /*< 6: 2> UMTS Absolute Radio Frequency
    Uint8                  highPriorityListIncluded; /*< 8: 1> valid-flag
    Uint8                  highPriorityListCount;  /*< 9: 1> counter
    Pub_X_HighPriorityList  highPriorityList[PUB_STD_SIZE_HIGH_PRIORITY_LIST]; /*< 10: 64> List
} L1_L1Eh_ActivateReq;

#define L1_L1EH_ACTIVATE_REQ_SIZE(_count) \
( \
    sizeof(L1_L1Eh_ActivateReq) \
)
#endif
```

Variable size primitives are in the same format except for comments.

But a different algorithm is use in the ...\_SIZE macro

```
#ifndef L1_L1EH_CHANNEL_RELEASE_REQ_CLASS
#define L1_L1EH_CHANNEL_RELEASE_REQ_CLASS
/*
 *
 */
typedef struct
{
    Pub_X_ActivationTime    activationTime;          /*< 0: 1> Pub_X_ActivationTime This pa
    UInt8                   trchTypeCount;          /*< 1: 1> counter
    Pub_X_TrchType          trchType[PUB_STD_SIZE_TRCH_CONFIG]; /*< 2: 32> Pub_X_TrchType The
} L1_L1Eh_ChannelReleaseReq;

#define L1_L1EH_CHANNEL_RELEASE_REQ_SIZE(trchTypeCount) \
( \
    offsetof(L1_L1Eh_ChannelReleaseReq,trchType) + \
    ( sizeof(*((L1_L1Eh_ChannelReleaseReq)0)->trchType) * (sCount) ) \
)
#endif /* L1_L1EH_CHANNEL_RELEASE_REQ_CLASS */
```

A new file called "L1\_L1Eh.intf" have been created  
This file should be included in the .conf file by use of an  
C-preprocessor

```
Interface =
{
  structHdrFile = "L1_L1Eh.h";
  inputs =
  {
    CPHY_ACTIVATE_REQ =
    {
      primNum = 0x80000080;
      primStruct = L1_L1Eh_ActivateReq;
      comment = "";
    };
    ...
  };
  outputs = {
    CPHY_ACTIVATE_CNF =
    {
      primNum = 0x80014080;
      primStruct = L1_L1Eh_ActivateCnf;
      comment = "";
    };
    ...
  };
};
```

Structs are in the same format except for comments.  
But the group need to be specified correctly in the SAP  
document

```
#ifndef PUB_X_ACCESS_SERVICE_CLASS_INFO_CLASS
#define PUB_X_ACCESS_SERVICE_CLASS_INFO_CLASS
/*
 * The access service class.
 */
typedef struct
{
    UInt8                availSignaturesCount;        /*< 0: 1> counter
    Pub_X_AvailSignatures availSignatures[PUB_STD_SIZE_SIGNATURES]; /*< 1: 16> Pub_X_AvailSi
    UInt8                availSubChCount;             /*< 17: 1> counter
    Pub_X_AvailSubCh      availSubCh[PUB_STD_SIZE_SUB_CHANNELS]; /*< 18: 12> Pub_X_AvailSubCh
} Pub_X_AccessServiceClassInfo;
#endif /* PUB_X_ACCESS_SERVICE_CLASS_INFO_CLASS */
```

Enums are in the same format except for comments.  
But the group need to be specified correctly in the SAP  
document

```
/*
 * enum to Variable dl_fdd_measurements
 * FDD measurements
 */
#ifndef PUB_X_DL_FDD_MEASUREMENTS_CLASS
#define PUB_X_DL_FDD_MEASUREMENTS_CLASS
enum
{
    PUB_X_DL_COMP_MODE_NOT_NEEDED_FOR_FDD = 0x0,    /* This parameter states if PHY needs downlir
    PUB_X_DL_COMP_MODE_NEEDED_FOR_FDD = 0x1          /* 1 means that DL compressed mode is needed.
};
typedef Uint8 Pub_X_DlFddMeasurements;
#endif /* PUB_X_DL_FDD_MEASUREMENTS_CLASS */
```



- **Outstandings**

- ⇒ Compile tools on UNIX host (no host in DK)
- ⇒ Update SAPS with correct group info (need TISD input)
- ⇒ Accept of changed ...\_SIZE implementation (type of variable arrays changed)
- ⇒ Verification on UNIX host (no host in DK)

- **Q & A**

- ⇒ We are here the next 2 days
- ⇒ <mailto:jho@condat.dk>



# CONDAT

## INSIDE