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**Title:** Use of FDT tools on the document ISO/IEC JTC1/SGFS N1331

**Source :** Korea (Mr. Heang-Suk Oh<sup>(\*)</sup>, Mr. Byoung-Moon Chin<sup>(\*\*)</sup> )

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**Note:**

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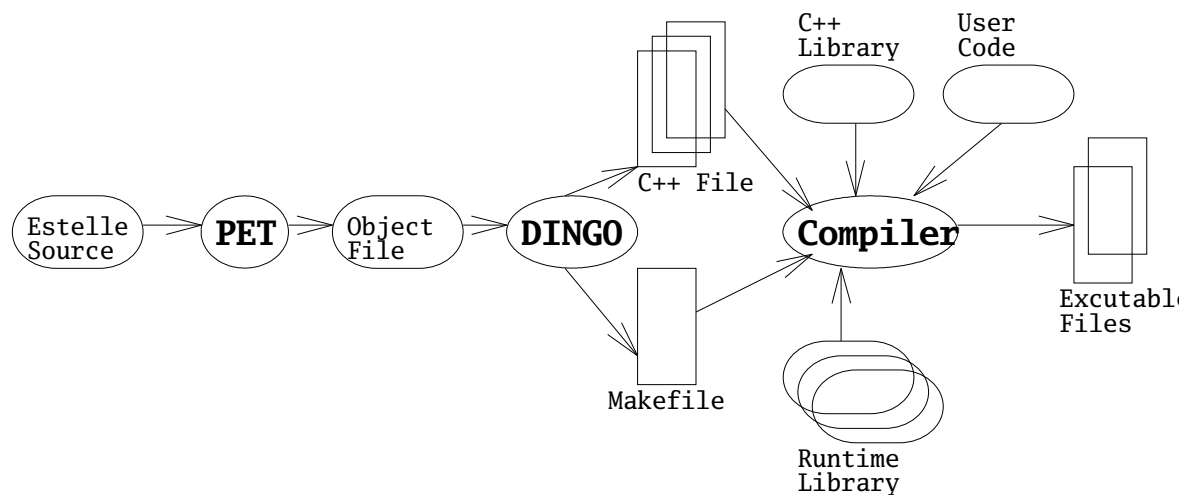
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We have reviewed the document ISO/IEC JTC1/SGFS N1331, Recommended from JTC1 for Action Plans and Information from SCs and SGFS on Implementation of JTC1 Policy on Conformity Assessment and JTC1 Policy on Interoperability (JTC1 N3826). We used the protocol development tools for test case generation. Based on this experience, we introduce the following methods about N1331 Clause 3.1.

a) PET/DINGO

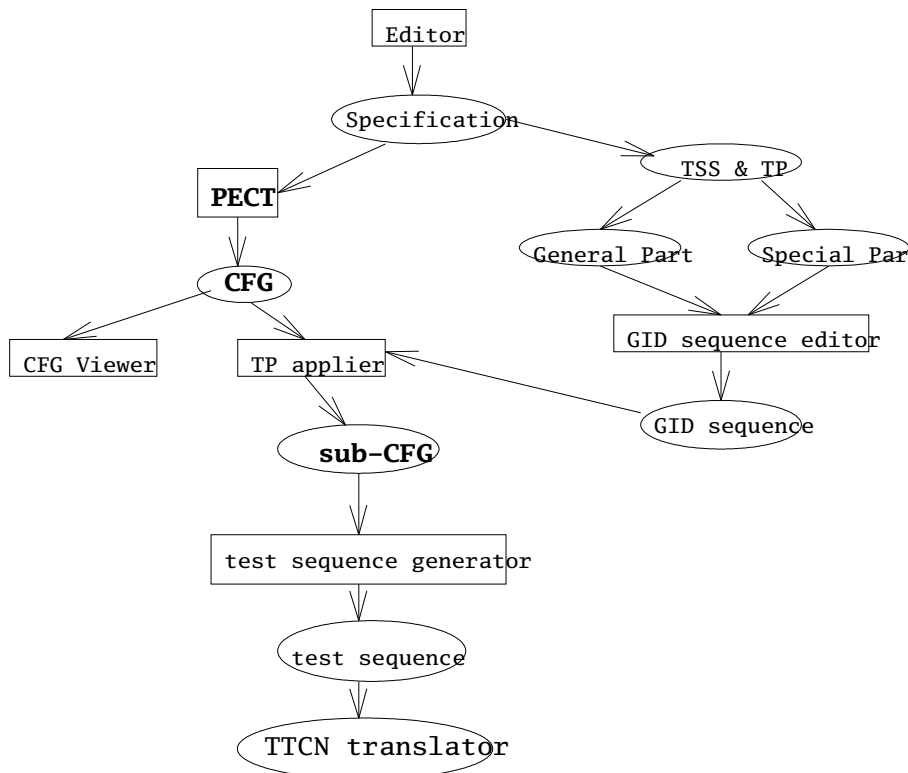
NIST (National Institute of Standards and Technology, USA) developed this tool. This tool provides the integrated tool set including specification (bookkeeping, front-end) and implementation (compiler, simulator). Presently, the NIST integrated tool set is comprised of the NIST Estelle Compiler (translates Estelle into C), WISE (simulation environment), WISARD (editor and translator), NIST Portable Estelle Translator (PET), and DINGO (C++ code generator)



(Figure 1) PET/DINGO Tool

b) PECT

Yonsei University (located in Korea) developed PECT (Potech Estelle to CFG Translator). This tool consist of five parts as Fig 2 : Specification Editor, PECT, TP (Test Purpose) Applier, Test Suite Generator, and user friendly interface part. The tool integrates the above modules into one to generate test cases. At first, PECT generates CFG (Control Flow Graph) from the specific protocol specification written by Estelle. The result become the input of TP Applier which applies test purposes selected appropriately. Based on the above procedures, Test Sequence Generator generates a series of test cases. And GUI part makes the tester observe the temporal execution process of the above mentioned procedures graphically. In addition to this, we have also suggested to solve the memory problems of PECT by using symbolic execution and assignment function of external IP. The developed automatic test case generation tool with applying test purposes and test case generation algorithm is applicable to a complicated real protocol.



(Figure 2) PECT Tool