



## eCall Simulator

开发和验证泛欧洲eCall组件的强大工具

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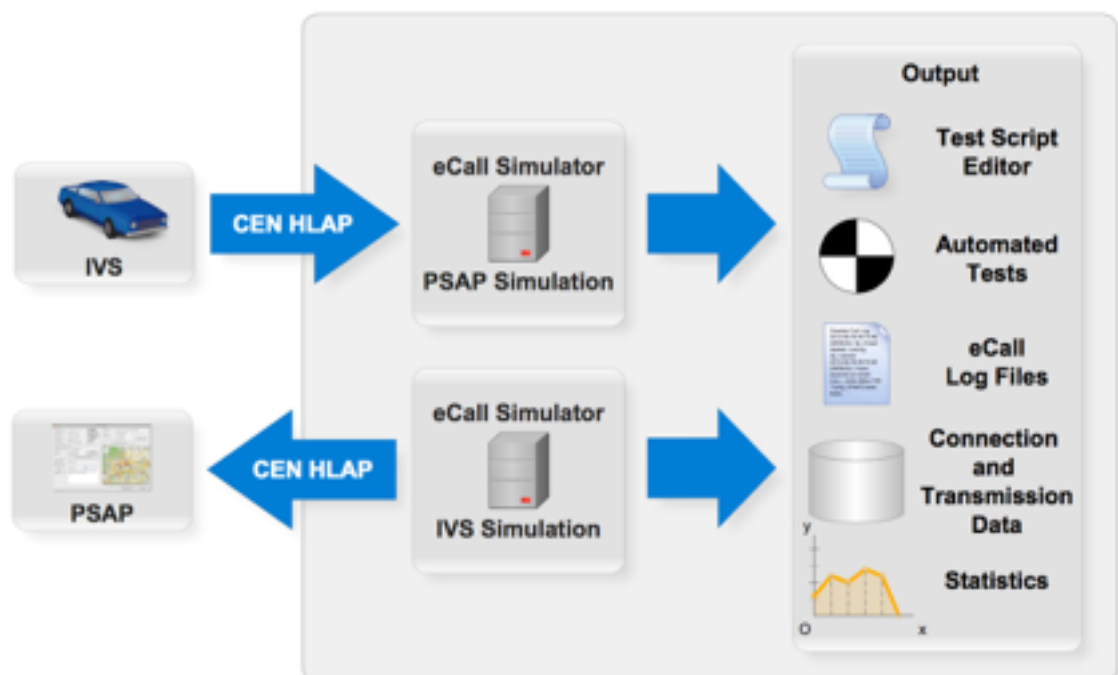
## eCall - 新的泛欧紧急呼叫

### 什么是eCall?

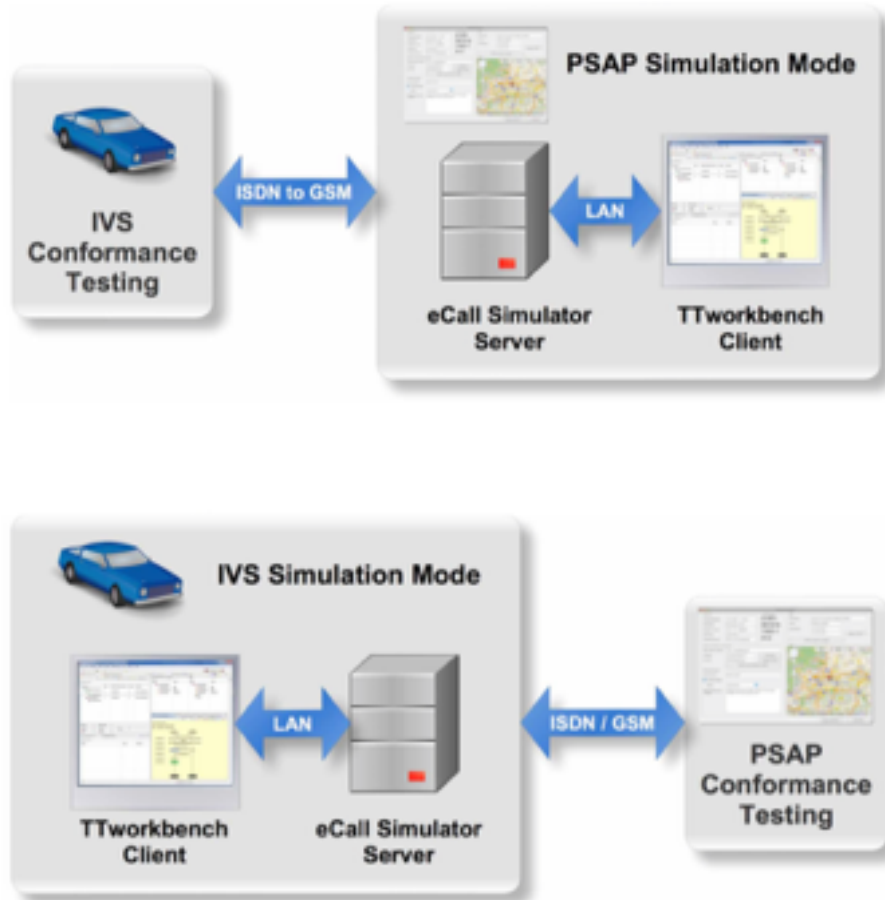
- 由车辆事故触发、通过紧急呼叫号码112的自动或人工紧急呼叫
- 在车辆乘员和PSAP操作员之间建立语音连接
- 首先传输车辆相关数据 (MSD)
- 传输大约10秒钟内完成
- 根据目前的欧盟指令，eCall将于2018年开始实施

### eCall Simulator工作原理

eCall Simulator是eCall component(eCall 组件)验证和一致性测试的强大工具。它可以配置为PSAP或IVS，并根据EN16454 (Intelligent transport systems - eSafety - eCall end to end conformance testing ) 及ETSI CTI Plugtests Guide Stable Draft V0.0.8标准提供76个标准规定验证测试用例。eCall Simulator是TestingTech和OECON的联合产品。它利用经过验证的TTworkbench作为测试执行的指定工具，以及经过认证的Oecon eCall组件作为这个产品的eCall功能执行部分。



## 功能概述和执行标准



CEN EN 15722 – Intelligent transport systems - eSafety - eCall minimum set of data (MSD)

CEN EN 16062 – eCall high level application requirements (HLAP)

CEN EN 16072 – PanEuropean eCall-operating requirements

EN/ISO 24978 – ITS Safety and emergency messages using any available wireless media - Data registry procedures

ETSI TS 122 101 – Universal Mobile Telecommunications System (UMTS); Service aspects and Service Principles

ETSI TS 124 008 – Digital cellular telecommunications system (Phase 2+); UMTS; Mobile radio interface Layer 3 specification; Core network proto- cols; Stage 3

ETSI TS 126 267 – eCall data transfer; Inband modem solution; General description

ETSI TS 126 268 – eCall data transfer; In-band modem solu- tion; ANSI-C reference code

ETSI TR 126 969 – 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; eCall Data Transfer; In- band modem solution; Charaterisation Report

## TTworkbench客户端 (示例: PSAP模拟 - MSD传输)

Management view contains test cases from a test campaign. Double click test case to start test. Shows results of test executions.

To configure test parameters and test adapter parameters.

The screenshot displays the TTworkbench Professional interface. The top window, titled 'Management', shows a list of test cases under the campaign 'eCall\_TestSuite\_PVS'. The list includes 'Mandatory\_PUSH' and 'Optional\_PUSH', each with several sub-cases (e.g., 'TO\_NWML\_PUSH\_01' through '07'). The status for all cases is 'CONTINUE'. A red arrow points to this window with the text: 'Management view contains test cases from a test campaign. Double click test case to start test. Shows results of test executions.'

The bottom window, titled 'Parameters', shows a table of test parameters and their values. A red arrow points to this window with the text: 'To configure test parameters and test adapter parameters.'

The rightmost window shows a graphical presentation of test case execution. It features a timeline with messages between components: 'MTC' (Mandatory Test Case) and 'SYSTEM'. The messages include 'send CallControlCmd', 'receive CallControlCmd', 'send CallControlCmd', and 'receive CallControlCmd'. A red arrow points to the execution log with the text: 'Graphical presentation of test case execution.'

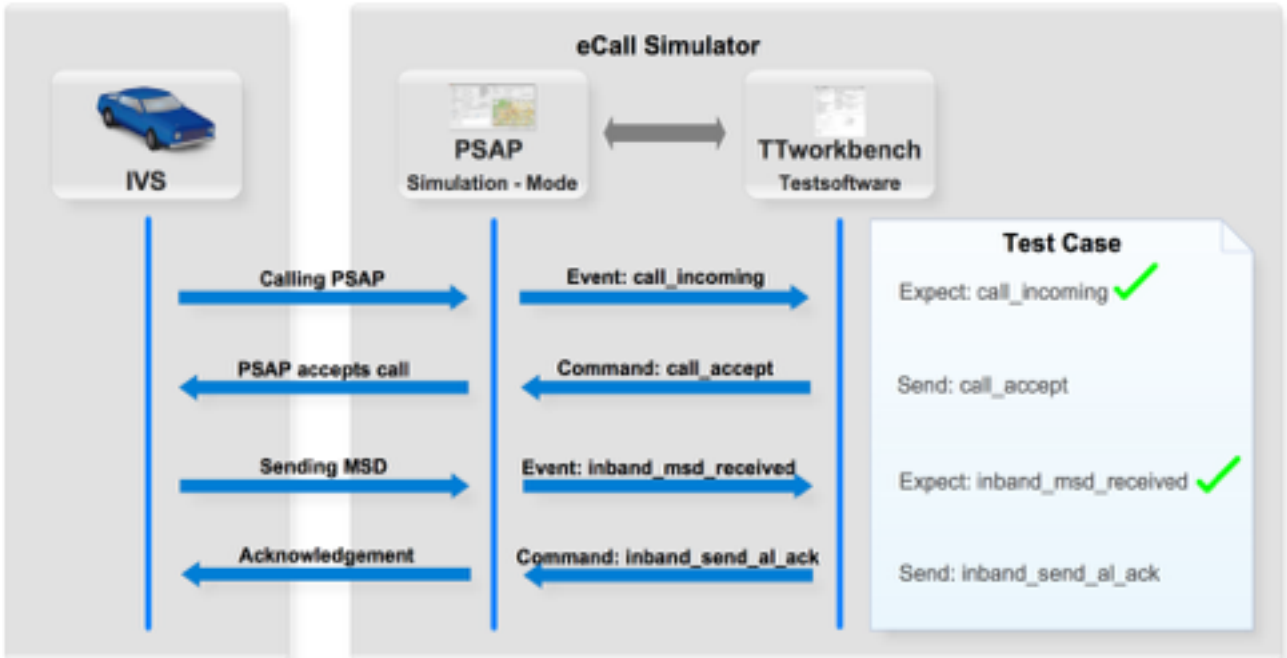
Name	Value	Default
WORKER	0	0
>>>PHONE_NUMBER	"91"	"
>>>PAP_PHONE_NUMBER	"91"	"
>>>INTERNAL_SUBSCRIBER	"inactive"	"
eCallMessage	{ id = 1, med... { id = 1, m...	
TEST_CALL	false	false
MESSAGEBOX_DISPLAY_TIME	10	10
ANSWER_DELAY_1	45.0	45.0
ANSWER_DELAY_2	5.0	5.0
>>>CALL_BACK_DELAY	5.0	30.0
CALL_HANGUP_DELAY	5.0	5.0
>>>TIMER	20.0	2.0
>>>TIMER	20.0	2.0
>>>TIMER	20.0	2.0

Graphical presentation of test case execution.

### 测试用例示例 - PSAP模拟 - MSD传输

eCall推送模式：MSD发送/接收/确认

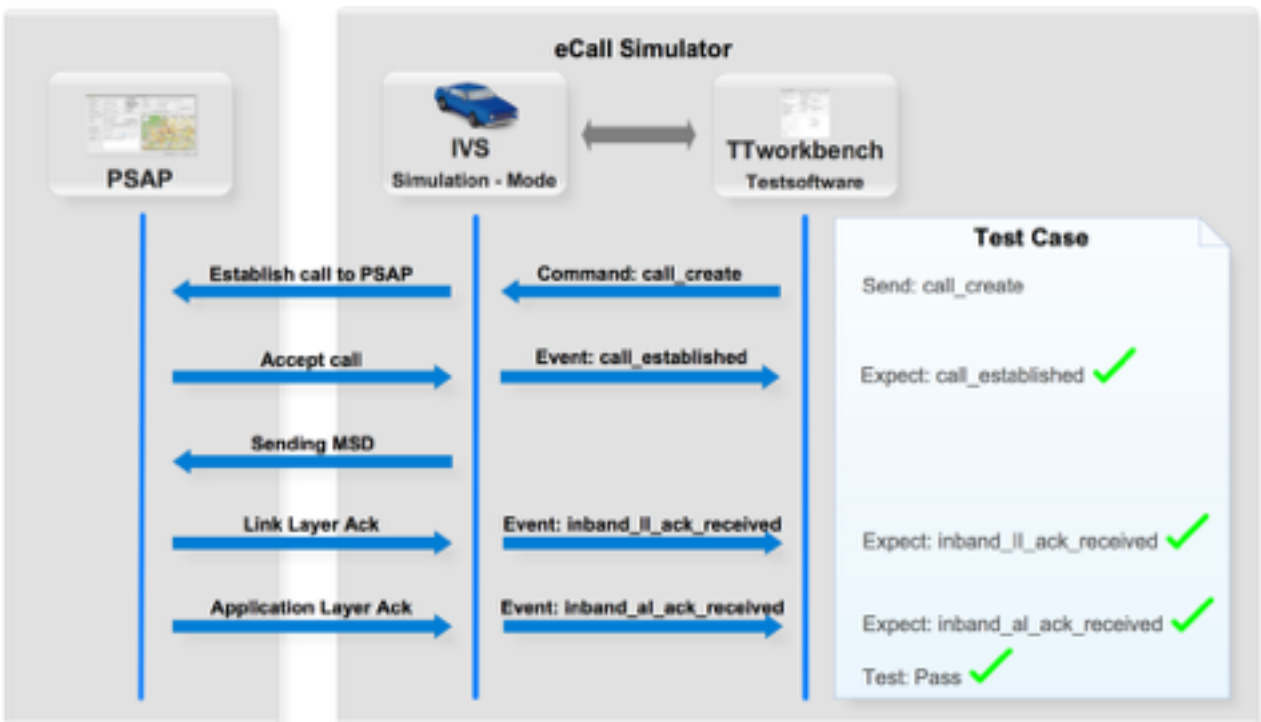
目的：验证可以在IVS和PSAP之间建立eCall，MSD可以被制定并无错误地传输到PSAP，PSAP可以发送并且IVS可以接收到MSD被正确接收的确认。



### 测试用例示例 - IVS仿真 - MSD传输

eCall推送模式：MSD传输/接收/确认

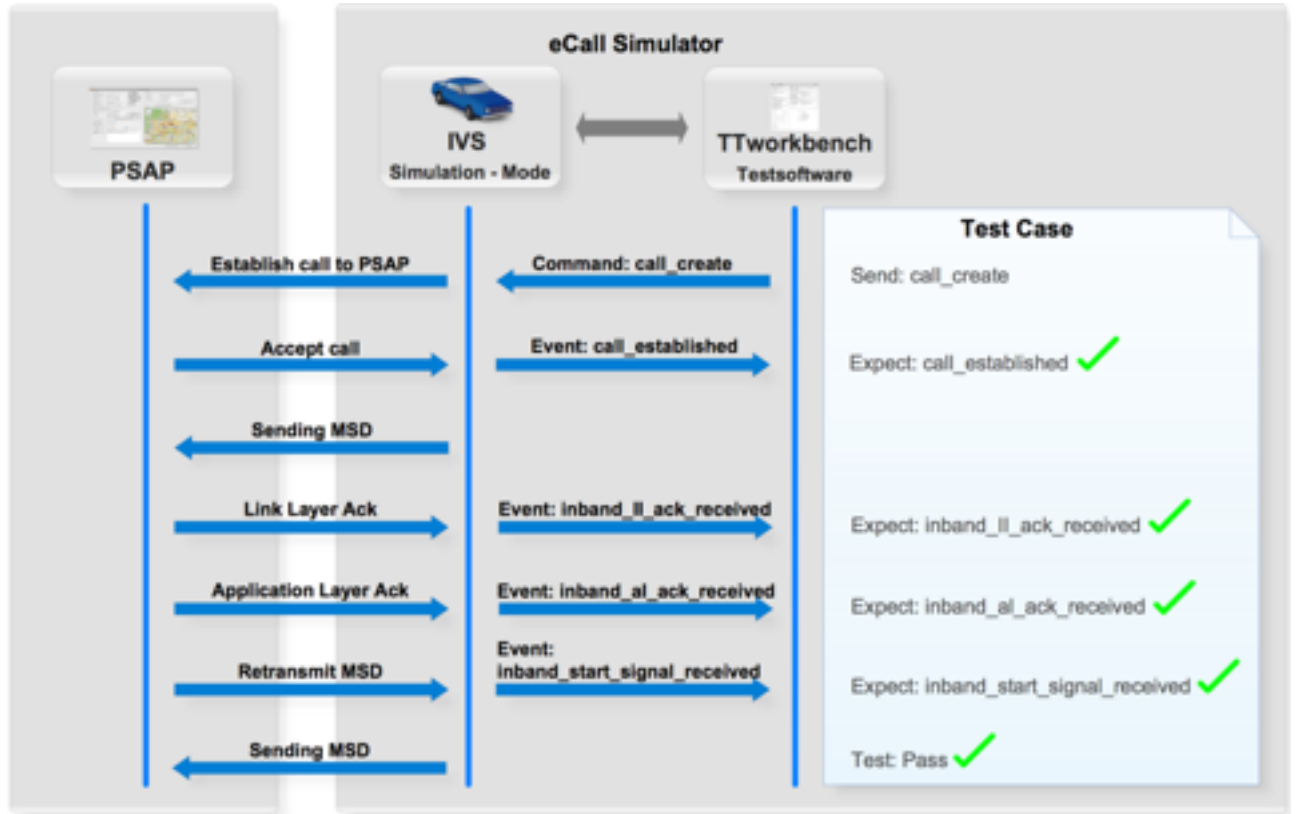
目标：与上图相同，但这次eCall Simulator用作IVS。



## 测试案例 - IVS模拟 - MSD重传

eCall推送模式：根据PSAP请求重新传输MSD.

目标：验证IVS是否能够识别并响应来自PSAP的请求，在语音对话期间，发送或重新发送更新的MSD。



## eCall Simulator选项

	eCall Simulator		
	Enterprise	Professional	Basic
<b>PSAP Simulation</b> Simulates a complete eCall PSAP solution for IVS conformance testing	●	●	●
<b>IVS Simulation</b> Simulates an eCall compliant in-vehicle system for PSAP conformance testing	●	●	●
<b>Supported ISDN channels</b>	30 channels		2 channels
<b>TTworkbench Software</b> For easy and powerful test execution	●	●	●
<b>27 Functional Tests</b> According to ETSI CT1 Plugtests Guide Stable Draft V0.0.8	●	●	●
<b>49 End to End Conformance Tests</b> According to EN 16454	●	●	
<b>User-defined test cases</b> Take advantage of the TTCN-3 language to modify or create your own tests	●	●	
<b>Unrestricted TTCN-3 compiler</b>	●	●	
<b>GSM support for IVS simulation (optional)</b>	●	●	
<b>19" Server Rack</b> High-End 19" Rack	●	●	
<b>Server Cube</b> Small Cube-shaped mobile Server System			●
<b>Provision of services to third parties</b> Conformance testing as a service for third parties	●		

## eCall Simulator特点

eCall Simulator利用现有的GNSS和GSM网络，允许在真实环境中测试设备。如果用户考虑依据eCall规范测试车载系统（in-vehicle)做适用性评估，eCall Simulator完全满足客户的期望。但eCall Simulator不能模拟像GNSS或GSM覆盖差的特殊情况（这两种情况都未被eCall规范所覆盖），需要详细测试不同组件（GNSS receiver，GSM调 Modem），则需要考虑在方案中加入GNSS和GSM模拟器。eCall Simulator用户可以基于eCall Simulator开发自己的测试用例。

## 联系我们

[www.testingtech.com.cn](http://www.testingtech.com.cn)

[sales@testingtech.com.cn](mailto:sales@testingtech.com.cn)

Tel: +86-10-5649-7908

## 术语列表

### **AL Ack**

Application Layer Acknowledgement。 Acknowledgment that is sent by a PSAP application if a received MSD passes the format check

### **CEN**

European Committee for Standardization

### **CTI**

Centre for Testing and Interoperability

### **ETSI**

European Telecommunications Standards Institute

### **EN**

European Norm

### **HLAP**

High Level Application

### **ISO**

International Organization for Standardisation

### **IVS**

Intelligent Vehicle System

### **LL Ack**

Link Layer Acknowledgement。 Acknowledgement that is sent by the inband modem if a received MSD passes the CRC (= Cyclic Redundancy Check)

### **MSD**

Minimum Set of Data that is sent from the incident vehicle  
(e.g. current position, approximate direction of travel, VIN, etc.)

### **PSAP**

Public Safety Answering Point

### **TR**

Technical Report

### **TS**

Technical Specification

### **TTCN-3**

Testing and Test Control Notation; a standardized programming language developed specifically for test solutions

### **UMTS**

Universal Mobile Telecommunications System

### **TTworkbench**

A Testsoftware of Testing Technologies IST GmbH