



In-depth assessment of proposed amendments of UN Regulation 129 on Enhanced Child Restraint Systems –

**UN Informal Group on CRS 21st Jan 2015
CRS-49-XX**



Background

Child safety projects/reports for the Commission (P Broertjes)

2009 – 2010

Analysis for the development of legislation on child occupant protection

2011 – 2012

Substitute & additional expert technical representation on behalf of the EC

2012 – 2013

Q-Series dummy family specification assessment

2012 – 2014

Assessment of amendments to the new regulation,

2013 – 2014

Q-Series crash test dummy family regulatory application assessment

2014 – 2015

Assessment of proposed amendments to original series of UN Regulation 129

Project objectives

- To support the Commission during the further development of UN Regulation 129 on “Enhanced Child Restraint Systems”
- To expedite final discussions and drafting of the second phase and to support discussions on the third phase of proposals; including:
 - Further development of the performance criteria and test methods for **non-integral child restraint systems**
 - On-going **validation and assessment** of other emerging issues identified by the Commission
 - **Drawing package assessment** for Q-Series dummy family

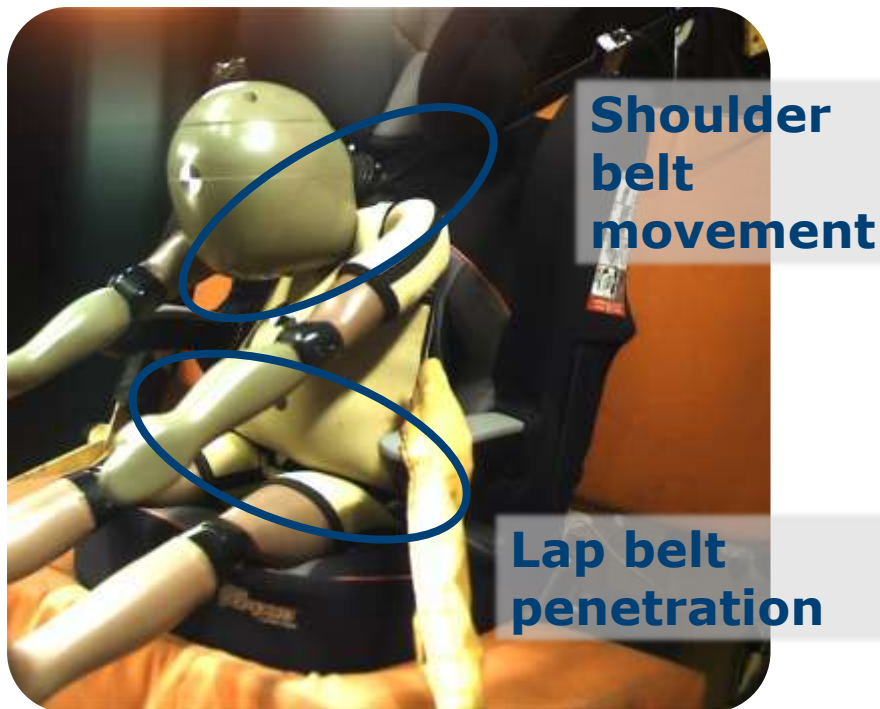
Project structure

Technical work programme

- Task 1: Further development of the performance criteria and test methods for **non-integral child restraint systems**
- Task 2: On-going **validation and assessment** of other emerging issues identified by the Commission
- Task 3: Q-Series dummy family **drawing package assessment**

Task 1: Further development of the performance criteria and test methods for non-integral CRS

- **Objective:** Propose and validate a solution that improves the capacity of UN Regulation 129 to differentiate between non-integral CRS



- Previous reports demonstrated issue and implications
- No ready-to-go solution for chest or abdomen
- Experiments to build on our previous work and that of other stakeholders

Task 1: Further development of the performance criteria and test methods for non-integral CRS

- **Approach:** 30 front impact sled experiments will be carried in total for this task
- Validate and build on findings to date
- First phase of testing end February

- Use of second chest deflection sensor
- Use of abdomen sensors
- Use of pelvis accessories
- General consideration of conditions and kinematics



Task 2: On-going validation and assessment of other emerging issues identified by the Commission

- **Objective:** Investigate and validate certain aspects of UN Regulation 129 when specific issues and questions arise, as identified by the Commission
- Investigate any specific issues that may arise in addition to Task 1 over the course of project

Task 3: Q-Series dummy family specification assessment

- **Objective:** Review the drawing packages of the Q6 and Q10 dummies for application in Mutual Resolution No. 1

Drawing Package for Q3 Dummy

as specified in UNECE Draft new Regulation on uniform provisions concerning the approval of enhanced Child Restraint Systems used on board of motor vehicles

April 2012

prepared by Humanetics for UNECE, Geneva



Q-dummy family, from left to right: Q1.6, Q3, Q6 (not further specified) and Q1.6 (Q10 not shown)

Introduction
The Q0, Q1, Q1.5, Q3 and Q6 dummy are developed between 1998 and 2004 in the European Union funded projects CREST (1997-2001) and CHILd (2002-2005). In 2008 the results of the development and evaluation of the Q dummies was reported to European Enhanced Vehicle-safety Committee (EEVC) by EEVC WG12 and 18: Child Safety (February 2008) and Q-dummies Report - Advanced Child Dummies and Injury Criteria for Frontal Impact (DOC14, April 2008). The Q10 dummy is developed in the European Union funded projects EPOCH (2009-2011).

This document specifies the drawing information of:
Q0 dummy representing a newborn child
Q1 dummy representing a 1 year old child
Q1.5 dummy representing a 1.5 year old child
Q3 dummy representing a 3 year old child

Note: The Q6 and Q10 dummy are not further specified in this document as they are not yet effective in the proposed draft new regulation.

These drawings and technical specifications are the sole property of Humanetics Innovative Solutions, Inc. and are deposited with the Secretary General of the United Nations to support the process of developing a UN Regulation or UN Global Technical Regulation. Except for commenting purposes pursuant to this process, the drawings and technical specifications shall not be copied or used for any other purpose without the written consent of Humanetics Innovative Solutions, Inc.

- CPR1665 provided in-depth assessment of Q3
- This task provides similar assessment of Q6 and Q10
- No compliance check of physical dummies

Request for data from stakeholders

- **Request data to help evaluate Task 1:** Propose and validate a solution that improves the capacity of UN Regulation 129 to differentiate between non-integral CRS

- Request stakeholder data for testing experience with Q3, Q6, Q10:
 - Non-integral restraints
 - Without a CRS

 - In R129 test environment
 - In body shell/vehicle test environment

 - Belt interaction solutions
 - Chest and abdomen loading measurements

Request for data from stakeholders

- **Request drawing packages to enable Task 3:** Review the drawing packages of the Q6 and Q10 dummies for application in Mutual Resolution No. 1
- Packages to be sent via formal chain from the Informal Group
 - With the approval of the group
 - With the approval of Humanetics



Any Questions?

Further input to:

Peter Broertjes

Legislative Officer

European Commission

Peter.BROERTJES@ec.europa.eu

Thank you

Jolyon Carroll
Senior Researcher
TRL
jcarroll@trl.co.uk