

Problem 1

One problem for me is the requirement of 5.1.3.6.1 where you speak of **signals** instead of wires or pins. I think that will cause problems with the terminology and requirements of ISO 11992 (e.g. ISO 11992, Part 1 - 6.4.3 **Bus failure management, cases 1 to 8, / 1- and 2-wire communications, etc.**)

For me it is also very strange when in Annex 17 it is required:

4.2.2.2.1.1 "...**A signal should also be transmitted via** ~~pin 5 of the ISO 7638 connector~~ **signal 5 of the Brake electric/electronic interface as defined in this regulation (paragraph 2.34)** (yellow warning)."

For me a **signal** is **not** the cable or a pin connection? I have not understood why you replaced e.g. "**pin**" by "**signal**".

Is e.g. "**Plus electrovalve (Braking)**" or "**Warning device**" a signal?

That is why I made in Geneva the remark about the "strange" language.

Problem 2

In your proposed paragraph 5.1.3.6.1 you require that pin 3 is the connection to the electronics (as defined by the current ISO 7638). This is necessary to fulfil ECE-R13, paragraph 5.2.2.15.2.1 (**red** warning signal required when electrical energy supply is not available anymore). However, this problem has nothing to do with FACS. That is a problem that today the defined ISO pin allocations do not reflect the real world.

Even if you cannot do about this I think it cannot be that new requirements are adopted in Geneva that cannot be fulfilled by the current braking systems. Thus, the involvement of ISO is very important to amend the requirements so that they reflect the real world. This is a criticism addressed to ISO and the braking system manufacturer and not to you!

Problem 3

I think the concept of Pont-to-Point has to be dealt with much more thoroughly. Obviously, when you are able to connect two ECUs (two "**nodes**" of two different vehicles) with more than one connection than this cannot be (by definition) a point-to-point connection. Thus, you have to deal a little more deeply with your proposed paragraph 5.1.3.6.2: --> ***The electric control line of the Brake electric/electronic interface shall conform to ISO 11992-1 and 11992-2:2003 and be a point-to-point type ...***"

Thus, I think you have to review in your ISO/CD 13044-2 the various electrical wiring diagrams of FACS in "**mix mode**".

With regard to the absolute maximum CAN cable length of 40 m, maybe also ISO 11992 has to be amended to take account the non-existing 7 m coiled cable length. **Only then** ISO/CD 13044-2 may allocate this length either to the towing or towed vehicle.

Problem 4

In R13/5.1.3.6.2 it is required that the motor vehicle must detect and display a **yellow warning** signal in the event of a failure of the electric control line (data communication and electrical energy). What happens when **both** connectors (FACS and ISO 7638) are used in parallel and there is a failure **in one** of the two different independent wirings?

Problem 5

For me it is very unusual that **ECE-R55** requires by paragraph 2.8.2.2:

“Fully automatic coupling systems that are controlled by a complex electronic control system shall be subject to a review according to the Annex 18 of the ECE Regulation 13.”

Why is it necessary to incorporate this requirement in a regulation concerning the approval of **mechanical coupling components**?

To do so it would make only sense to me if this FACS device could be approved according to **ECE-R55** as an "Electrical sub-assembly (ESA)" which is part of "The System" (see paragraphs 3.1 of Annex 18) which performs one or more specialized functions and which may be approved at the request of a manufacturer as either a "**component**" or a "**separate technical unit**". For such a device a **type approval** had to be granted and an **approval mark** had to be allocated.

But that is absolutely not the case. Since about 10 years I have carried out many Annex 18 assessments. It had never occurred to me as a braking expert to check the more than hundred UN-Regulations for requirements with regard to Annex 18. But what sense does it make to address this requirement to a R55-expert? He can never make an assessment about "The System" (which by definition is not the FACS!).

If you think an additional reminder for the braking expert who carries out an Annex 18 assessment is necessary

--> *“In order to safeguard a reliable implementation of the double mechanical locking requirement of the paragraph 4.5 any complex control system of a FACS is made subject to a review according to Annex 18 of the ECE regulation 13.”* (see your "Justification" in ID-69-13)

--> then I think you should do this in ECE-Regulation No. 13 itself. Only in this regulation the Annex 18 expert will take notice of this requirement.

Someone who makes an Annex 18 assessment has to assess the safety concept of the manufacturer and has to deal with **all** of the **in- and output signals** which are controlled by "The System" (see e.g. paragraphs 3.2.1, 3.2.2: sometimes several hundreds of signals coming from **many other subsystems**) and in particular the requirements of section **3.4**).

Of course such an Annex 18 report would also assess the safety requirements which are actually addressed by ECE-R13 (see e.g. above **problems 1 to 4**).

In Informal Document No. GRRF-67-15 you outline:


“The TÜV-SÜD has issued an assessment report declaring the MFC to comply with the UNECE Regulation No. 13, Annex 18.”

I guess that the TÜV-SÜD report is an **excellent safety assessment** with regard to your MFC. However, I think it is misleading to call this an **Annex 18** report. It would be like saddling a pig and call it a horse.

I am very interested to learn a little more about the safety concept of your MFC and would appreciate very much if you would send to me this report by email. Many thanks in advance!

Editorial comment

Informal document No. GRRF-69-14

Amend paragraph 5.1.3.8, to read: 

*“... part of the power-driven vehicle.” **For vehicle combinations with a FACS automation level there may be a short flexible hose on either side of the coupling in order to enable automatic operation. In all other cases, the ...**”*

5.1.3.8. Shut-off devices which are not automatically actuated shall not be permitted. In the case of articulated vehicle combinations, the flexible hoses and cables shall be a part of the power-driven vehicle. In all other cases, the flexible hoses and cables shall be a part of the trailer.

The purpose of this paragraph 5.1.3.8 – to my understanding - is to define for the response time measurement (Annex 6) **to which vehicle the flexible hoses and cables belong**. Thus, the second and the third sentence of this paragraph belong together and should not be interrupted by a different statement, namely your **bold** additional sentence (“*For vehicle combinations with a FACS ...*”). If this sentence is seen as necessary it can be added at the end of this paragraph 5.1.3.8 as another requirement (as the first sentence (“*Shut-off devices ...*”) of this paragraph.

In **ID-69-14** you say;

*“The current revision of the ECE R13 **requires** that flexible hoses **may be used** on one side of the coupling only. Many FACS implementations require flexibility on either side of the coupling to be able to encompass the movements necessary in the automatic coupling process.”*

I do not understand this argumentation; see my comments above!