

## libosmocore - Feature #2905

### implement proper/generic mandatory IE validation

01/31/2018 11:35 PM - laforge

<b>Status:</b>	Feedback	<b>Start date:</b>	01/31/2018
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	fixeria	<b>% Done:</b>	30%
<b>Category:</b>	libosmogsm		
<b>Target version:</b>			
<b>Spec Reference:</b>			
<b>Description</b>			
<p>In almost all of the TLV based protocols we deal with (OML, RSL, BSSAP, RR/CC/MM/...) the specification of the individual messages always includes a statement on which IEs are mandatory, which are conditional and which optional.</p> <p>In some of our later protocol implementations such as sua/m3ua in libosmo-sigtran, I have introduces some data structures which are basically constant arrays of integers, listing all mandatory IEs for each message type.</p> <p>Such data structures should be created for our earlier protocol implementations (particularly RR/CC/MM), and some generic function should be added next to our TLV parser to determine if all mandatory IEs for a given message exist. This step would then be done as a separate function call by the library user, after having called <code>tlv_parse</code>.</p> <p>The callers must then make sure to take the appropriate action, such as informing the sender with the proper cause (such as "invalid/missing mandatory information").</p> <p>We don't need the same information for optional IEs, as unknown optional IEs are typically silently ignored to ensure future compatibility.</p> <p>So the general policy would then be:</p> <ul style="list-style-type: none"><li>• call <code>tlv_decode()</code></li><li>• call the new "verify if all manatory IEs present" function<ul style="list-style-type: none"><li>◦ if some are missing, return protocol-specific error</li></ul></li><li>• "manual" check if all conditional IEs present (not possible in generic verifier)</li><li>• ignore any unknown/unhandled optional IEs</li></ul>			

#### History

##### #1 - 09/26/2018 08:02 PM - fixeria

- Project changed from Cellular Network Infrastructure to libosmocore
- Category set to libosmogsm
- Status changed from New to In Progress
- Assignee changed from sysmocom to fixeria

##### #2 - 09/26/2018 11:03 PM - fixeria

- Status changed from In Progress to Feedback
- % Done changed from 0 to 30

A conceptual implementation has been sent for review:

<https://gerrit.osmocom.org/11105/>

There is no actual verification logic (yet), but there are basic structures and some examples of their usage (see `tests/tlv/tlv_msg_def_test.c`).

Before implementing it, I need to know whether the proposed API is good, or should I change / extend it. Any ideas are welcome!