Requirements for Plug & Produce

07/21 v02

Make network configured traffic types and PTP instances available for middleware / application alignment

Günter Steindl
Siemens AG
Splitting network configuration from middleware/application configuration

Plug & Produce requires the splitting of responsibilities between middleware/application and network provisioning.

This make it impossible for the middleware/application configuration tool to assign PCP/VID values to middleware defined traffic types.

Another topic is the alignment of PTP instance IDs.

Thus, a translation

• between middleware defined traffic types and network provisioned traffic types is needed.
• between middleware defined PTP instances/names and network provisioned PTP instance IDs / descriptionDS.userDescription is needed.
Traffic Type Translation
### IEC/IEEE 60802 Traffic Types and Middleware Translations

Middlewares need to translate their traffic types into the network provided traffic types. Each middleware supports different traffic types, which are categorized based on their importance and timing requirements.

#### Traffic Types

<table>
<thead>
<tr>
<th>Traffic Type</th>
<th>PCP</th>
<th>VID</th>
<th>VID (red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iso</td>
<td>6</td>
<td>101</td>
<td>102</td>
</tr>
<tr>
<td>Cyc</td>
<td>5</td>
<td>103</td>
<td>104</td>
</tr>
<tr>
<td>ACyc</td>
<td>4</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>Network Control</td>
<td>7</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Event and Alarms</td>
<td>3</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>Connection</td>
<td>2</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>BEH</td>
<td>1</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>BEL</td>
<td>0</td>
<td>100</td>
<td>---</td>
</tr>
</tbody>
</table>

#### Middleware Support

- **Middleware A** supports traffic types Iso, Cyc, ACyc, Network Control, Event and Alarms, Connection Management, BEH, and BEL.
- **Middleware n** supports traffic types Critical, Medium, Low, Network Control, Event and Alarms, Connection Management, BEH, and BEL.

IEC/IEEE 60802 need to provide this information to the different middlewares to support the translation / use of the network configured values. These values are defined by the TDME/CNC and provided by Network Provisioning (NPE).
PTP Instance ID /
descriptionDS.userDescription translation
IEC/IEEE 60802 need to provide this information to the different middlewares to support the translation / use of the network configured values.

This values are defined by the TDME/CNC and provided by Network Provisioning (NPE).
Conclusion

Translation tables allows late binding of the Middleware / Application to the network resources.

This late binding supports Plug & Produce use cases.

Additionally, using string references would allow to skip definition of instanceID in the 60802 profile. Instead the content of “descriptionDS.userDescription” would need to be defined and used for the binding.
Questions?