Expressing dependencies on features
Open-CMSIS-Pack

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Agenda

Features

Why dependencies on features

Current proposal

Features

Definition

- Notion introduced from the will to distinguish
  - Component identification (ex. Resolving dependencies)
  - Component classification (ex. Filtering component according to criteria)

- Existing proposal
  - Child node of PDSC component node
  - Contains a list of children
    - Each child is a feature expression
    - Associate a key and a value
    - Some keys are defined by the standard
      - The associated value can be constrained
    - Other keys can be defined by each vendor
  - The goal is to provide a common basis of classification which can be easily extended by each vendor

```
<component …>
  <features>
    <feature key="Layer" value="Application"/>
  </features>
</component>
```
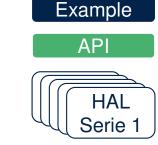
Why dependencies on features?

ST specific issue [1]

- ST plans to deliver on HAL drivers pack per serie

- Some example components will also be delivered in additional packs

- Those example
  - Are common to all series
  - Demonstrate HAL use-cases
  - Are based on generated code (thanks to a generator)

- A common way to address this relationship would have been to use an API and provide components implementing that API in all packs

ST specific issue [2]

- For many reasons, it is not possible to provide such a common API in ST deliveries

- The possible alternative
  - Associate ST specific features to all HAL components
  - Make example component rely on those features thanks to conditions

- Problem
  - Definition of condition needs to be modified to achieve this
  - This situation is a corner case
  - Modifying the common structure of PDSC to address a corner case does not look the right solution

Current proposal

Extending the PDSC description

- Provide entry point in the PDSC to add vendor specific elements

- Such a mechanism already exist for devices
  - Definition <u>here</u>

```
<package>
  <devices>
    <family Dfamily="XMC1000 Series" Dvendor="Infineon:7">
      ...
      <environment name="uv" Pname="M0">
        <CMisc>--C99</CMisc>
        ...                        Vendor specific elements inside
      </environment>
      ...
    </family>
  </devices>
</package>
```

- Such extension could be added in condition node to provide the expected flexibility
  - And maybe some other places of the PDSC structure

Thank you

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