Using COSMIC-FFP
for sizing, estimating & planning
in an ERP environment

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Setting

- Dutch Ministry of Agriculture, Nature and Food Quality

- Office for Regulations

- Financial regulations for 12,600 arable farms, 25,000 dairy farms, eggs and livestock
Changing environments

- **Political change**
  - Product support to income support

- **Technology change**
  - Dedicated applications to ERP

- **Organisational change**
  - Design change

- **Production change**
  - Projects to industrial production
Sizing in an ERP environment

- Regular ERP implementations are sized per module
- Regular software development is sized on data and functions
- But how to size this ERP environment
The administrative environment

- **Business Process Model**

![Diagram of Business Process Model]

- **Gather Information**
- **Register**
- **Review**
- **Decide**
- **Effectuate**
- **Communicate**

**Process Management**

**Data Management**
The ERP environment

Business Process
- Process
- Sub Process
- Activity

Quality module couples other ERP module functions

Quality module as base for the user interface
Sizing in the ERP environment

- The design is focused on activities
- No (clear) connection with data
- FPA not applicable
COSMIC Full Function Points

- **Refined approximate COSMIC-FFP:**
  - Small 4 Cfsu
  - Medium 7 Cfsu
  - Large 11 Cfsu
  - Complex 24 Cfsu
Software production

**Software Factory**
- Productivity
- Predictability

Key elements:
- All-round system engineers
- Standard working method
- Development tooling
- Supporting processes
Estimating effort in software factory

- **Two types of effort**
  - Time related
  - Size related

<table>
<thead>
<tr>
<th>Direct effort</th>
<th>Support effort</th>
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<tbody>
<tr>
<td>Design adm. organization</td>
<td>Architecture</td>
</tr>
<tr>
<td>Design custom software</td>
<td>Project management</td>
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<tr>
<td>Set-up design</td>
<td>ERP set-up</td>
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<tr>
<td>Build custom software</td>
<td>Process improvement</td>
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<tr>
<td>System test</td>
<td>Quality control</td>
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<tr>
<td>Integration test</td>
<td>Metrics office</td>
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Planning production

- **Time to delivery**
  
  \[
  T = \frac{\text{Size}(0.17 \times PL + 0.03)}{PL}
  \]

- **Staffing**
  production line(s)
Staffing production lines

Main factors:

- Size of process chain
- Amount of reuse
- Complexity
- Autonomy
Other use of size metrics

- Stability rate
- Direct cost
- Scope creep
- Change management
- Technology choice
What we have learned

- COSMIC-FFP is useful in an ERP environment if only process information is available
- COSMIC-FFP is useful if parameterization is dominant in the ERP implementation
What do we want to learn

- Calibration of refined approximate COSMIC-FFP
- Bridging the gap to the sizing of regular ERP implementations