Good Practice Effort Estimation in Ericsson's AXE 10

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Content

- Background: Ericsson, ESSI and Good Practices
- AXE 10 development process
- Elements of Estimation Good Practice Package
- Experiences and results

03/02/97
CORPORATE PRESENTATION
www.Ericsson.se

ESSI Improvement Engine

- Building
- Performance monitoring
- Drive phase improvements
- Support
- Online
Use the opportunity of corporate VFAs to aggressively drive efficient spread of Good Practices
- Improve Ericsson ability to use Good Practices and get the expected results
- Provide a Good Practice infrastructure to facilitate efficient spreading
- Establish a steal-with-pride culture
Good Practice Format

Facts

Diagnosis

How to get started

AXE 10 Development Process

Toll Gate 2

03/02/97
Elements of Estimation GP-Package

- Effort estimates based on size or complexity
- Test estimation based on design estimates
- Administrative/overhead estimation
- Experience factors
- Wideband Delphi Method

Total cost = Technical cost * Overhead * Experience

Effort based on Size or Complexity

Size * Factor = Effort

- Based on size of modification

FSD
new module
10 hours/line

SSD
new module
4 hours/signal

FT
new module
7 hours/line (40% execution)

- FSD work based on complexity and size

<table>
<thead>
<tr>
<th>High complexity</th>
<th>Med. complexity</th>
<th>Low complexity</th>
<th>Existing function</th>
</tr>
</thead>
<tbody>
<tr>
<td>New function</td>
<td>New function</td>
<td>New function</td>
<td>Existing function</td>
</tr>
<tr>
<td>1000-2000 lines</td>
<td>500-1000 lines</td>
<td>250-500 lines</td>
<td>150-300 mths</td>
</tr>
<tr>
<td>Medium module</td>
<td>Medium module</td>
<td>Medium module</td>
<td>Medium module</td>
</tr>
<tr>
<td>New function</td>
<td>New function</td>
<td>New function</td>
<td>New function</td>
</tr>
<tr>
<td>750-1500 mths</td>
<td>500-1000 mths</td>
<td>250-500 mths</td>
<td>150-300 mths</td>
</tr>
<tr>
<td>Small update</td>
<td>Small update</td>
<td>Small update</td>
<td>Small update</td>
</tr>
<tr>
<td>50-100 mths</td>
<td>25-50 mths</td>
<td>25-50 mths</td>
<td>25-50 mths</td>
</tr>
</tbody>
</table>
Administrative/Overhead estimation

- Technical and test overhead:
  - Design follow-up: 20% of sum of FDC and SSD costs
  - Regression test cost: 94% of FT cost
  - Black opening and release: 123 hrs per black
  - PIT verification: 160 hrs in total
  - Ant system test: 200 hrs in total

- Administrative overhead (percent of total)
  - Project management: 10%
  - Co-ordination management: 7%
  - Development environment: 2%
  - Meetings: 5%
  - Travel time: 2%

Experience factors

- Case 1: Efficiency
  - Months of experience
    - 25%: 0.3
    - 50%: 3.6
    - 75%: 6.9
    - 100%: 9

- Case 2: Cost drivers for lacking experience
  - AXE 10: 2% per quarter for year 1 to 3
    - 3% per quarter for year 0 to 1
  - Sub-system: 2% per quarter for year 1 to 2
    - 3% per quarter for year 0 to 1
Recently focus on delivery precision = lead-time