Looking at the Case Management Modeling and Notation (CMMN) from a research perspective
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Introduction

In the last decade, case management has become an active area of research in the BPM research community. In the context of process technology, it was first introduced by Berkley and Eccles [1] in 1991 and Davenport and Nohria [2] in 1994. Case handling was introduced by Van Der Aalst and Berens in 2001 [13] and Reijers et al. [9] in 2003 to support the flexibility required by knowledge workers during a process and to help them better deal with exceptions that may occur during such process. Unlike workflow and most other process methods that focus on what should be done in a process, case management focuses on what can be done to achieve the business goal of the process [14].

With the publication in early 2014 of the Case Management Modeling and Notation (CMMN) by the OMG, research teams started to focus on that specification. Schönig et al. [10] considered human centric processes starting with CMMN modeling skeletons that evolve over time. Hauder et al. [3] explored the applicability of CMMN for knowledge intensive processes exposed via a wiki environment for business users. Kurz et al. [5] compared CMMN against adaptive case management and concluded that for the most part CMMN fulfills the adaptive case management requirements. My colleagues and I [7] evaluated CMMN against knowledge-intensive process requirements, and conclude that it is a suitable approach as long as the execution environment is flexible enough.

CMMN Complexity

We have analyzed CMMN from different perspectives. We have look at the provenance of the specification [6], its applicability to knowledge-intensive processes [7], its meta-model complexity [8], and currently we are focusing on complexity metrics for it.

We compared the CMMN meta-model against other modeling notations [8], including several subsets of BPMN 1.2, and concluded that CMMN compares favorably to other process modeling notations like BPMN. The following table describes our findings [8],

<table>
<thead>
<tr>
<th>Method</th>
<th>Objects</th>
<th>Relationships</th>
<th>Properties</th>
<th>Cumulative complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPMN 1.2 [4]</td>
<td>99</td>
<td>6</td>
<td>143</td>
<td>169.07</td>
</tr>
<tr>
<td>BPMN 1.2 DoD subset [4,12]</td>
<td>59</td>
<td>4</td>
<td>112</td>
<td>126.65</td>
</tr>
<tr>
<td>BPMN 1.2 case study subset [4,15]</td>
<td>36</td>
<td>5</td>
<td>81</td>
<td>88.78</td>
</tr>
<tr>
<td>Subsystem</td>
<td>Complexity Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPMN 1.2 frequently use subset [4,16]</td>
<td>21 4 59 62.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMMN 1.0</td>
<td>39 4 28 48.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UML 1.4 Activity diagrams [11]</td>
<td>8 5 6 11.18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We are now conducting empirical research on complexity metrics for the CMMN specification. For that purpose, we have created a short CMMN tutorial that introduces participants to the complete CMMN version 1.0 specification. The tutorial should take 30 to 40 minutes to complete. The tutorial is followed by a short survey designed around a set of CMMN models. Each participant is only exposed to two models from the set. The survey should take between 15 to 20 minutes to complete.

The minimum number of participants required for a statistical significant sample in our current experiment is 136 evenly distributed across the set of models. The survey is designed to assign two random models to each participant. Therefore, realistically we may need around 200 participants to obtain a statistically significant sample.

**Request for participants**

In this phase of the research, we are looking for participants with basic knowledge of process technology to take the tutorial and survey. Participants don’t need to be familiar with CMMN, because the tutorial provides the required knowledge to complete the survey, which can be considered a quiz on the tutorial. Participation is voluntary and no identifiable personal information is collected.

Participants will learn about CMMN with the tutorial; and they will gain some experience and appreciation for CMMN by evaluating two models in the survey. The full exercise takes about 45 to 60 minutes to complete; but it can be done in multiple sessions. As an appreciation to the participants, we will donate $6 (six dollars) to a charity of their choice and we provide them with early results of the survey.

Readers willing to participate can use the following URL to take the optional tutorial and survey. The first page provides more information on the project. The URL will be available for three weeks, or until we have reached the required number of responses.


**References**


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Mike Marin is an IBM Distinguished Engineer currently taking a two years Sabbatical at the University of South Africa (UNISA) in Pretoria. The work reported in this article has been done at UNISA.

Marin is also an Association for Computing Machinery (ACM) Distinguished Member and life member, with a MSCS in Artificial Intelligence. He has more than twenty years of experience designing and developing system software, including workflow, business process management, and case management products. He has been an active participant in standard organizations, including WfMC, OMG, and OASIS; working on BPM, Case Management, and workflow standards. He has edited and contributed to the definition of several software standards, including WS-BPEL, BPMN 1.0, XPDL, and CMMN.