A Preliminary Tool for Model-Driven Development extended with layer diagram for Context-Oriented Programming

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**Final Goal**
Next generation systems such as Industry IoT will provide multiple services or change behavior depends on surrounding environments.

**Issues**
- Crosscutting-concern at runtime
- High performance
- High productivity & quality

**Crosscutting Concerns**
One change of environments affects all or several modules.

**Runtime**
Such changes occur at runtime.

**RTCOP**
To solve crosscutting-concern problem at runtime

**Context-Oriented Programming: COP**
**Aim:** Change behavior depends on contexts at runtime
**Contexts** = surrounding environments
**Mechanism:** Change multiple-classes by a layer

**Sample of RTCOP**

```cpp
// Main.cpp
#include "Hello.lh"
#include "baseLayer.h"
#include "Japanese.lh"

Hello* hello = copnew Hello();
hello->Print();
hello->Activated(japanese); // Execute Base Method proceed();
```

**R-CORP**
Robot-Context-Oriented Reconfigurable Platform & Development Methodology

**MDD**
Model-Driven Development

Generate COP program from xtUML

**COP generator**
1. Extract layer information from the SQL table of xtUML
2. Combine the layer information with C++ original code

**Plan**
A mixed-reality factory will run on COP generated from MDD

**Future Work**
Current
Programs in COP run on a mixed reality system.

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References:

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