

# **Translating Platform-Independent Code into Natural Language Texts**

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# Motivation

IF YOU LEARNED TO SPEAK LOJBAN,  
YOUR COMMUNICATION WOULD BE  
COMPLETELY UNAMBIGUOUS AND LOGICAL.

YEAH, BUT IT WOULD ALL BE  
WITH THE KIND OF PEOPLE  
WHO LEARN LOJBAN.



# Problem and context

The image displays a software development environment with several overlapping windows:

- Top-left window:** A component diagram titled "component: Watch" showing components like "Antenna" and "UI" connected by a "workout" signal.
- Middle-left window:** A data acquisition window titled "Data Acquisition: ..." showing a diagram with components like "track log" and "workout timer".
- Middle-right window:** A state machine diagram titled "workout timer: In..." showing states like "2. running" and transitions like "tick".
- Bottom-right window:** A code editor titled "running: State Ma..." containing the following code:
 

```

//this unrelate should be &ot
select one reset related by self->LAPRESET[R4];
if (not_empty reset)
    unrelate self from reset across R4;
end if;

self.seconds = self.seconds + 1;
create event instance tick of WTIMR2:'tick' to self
t = TIM::timer_start( microseconds:1000000, event_
LOG::LogInfo(message:"timer tick");
      
```

# Possible solution

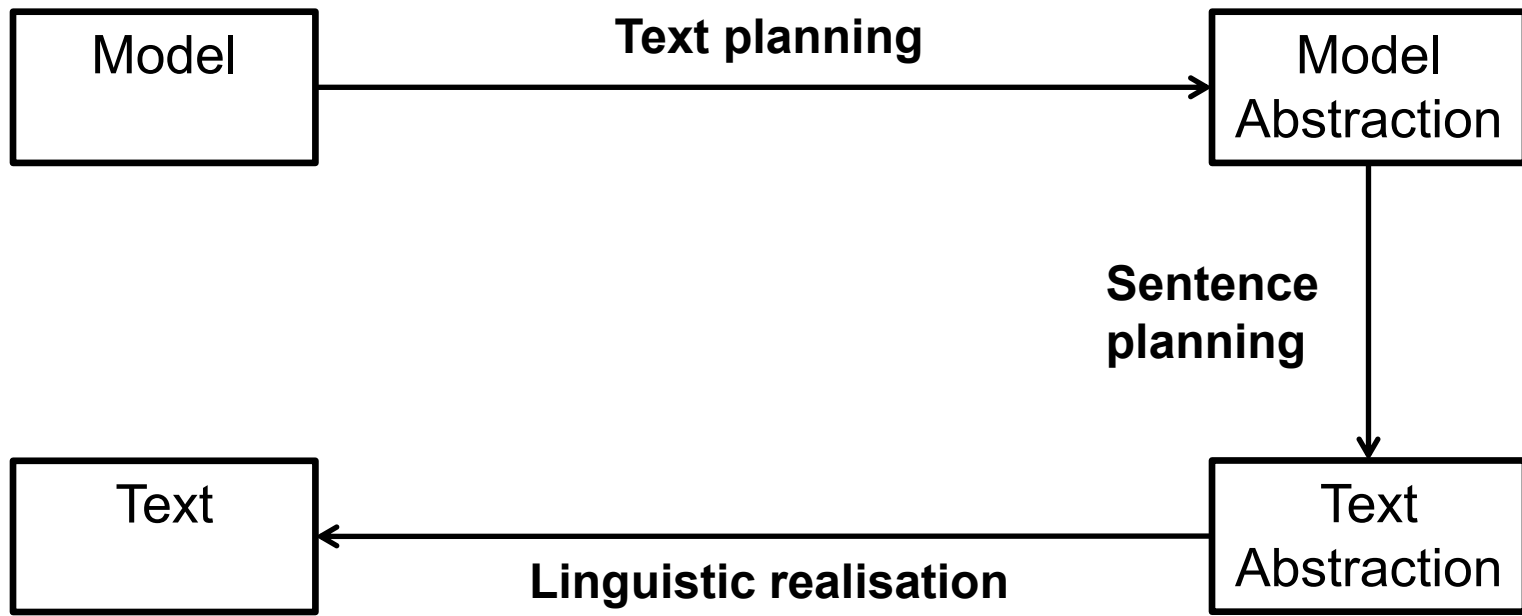
*Everybody knows how to consume text*

System Architect at Ericsson

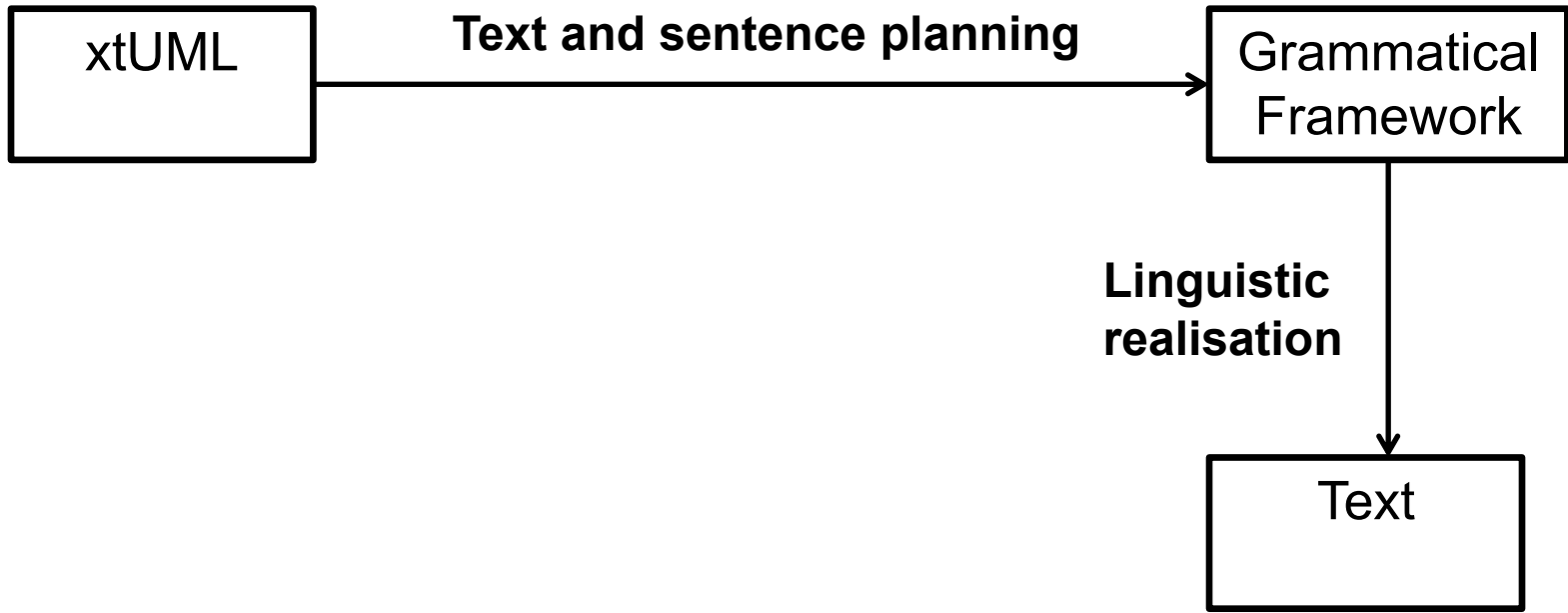
# M2T: Model-to-Text



# NLG: Natural language generation



# Case study



# Examples

## Action language

create object instance res of  
Reservation;

relate res to self across R4;

select many res related by  
room -> Reservation[R2];

## English

res refers to a Reservation

res and the BookingProcess  
share information

ress refers to many  
Reservations



# Conclusion

- First attempt to translate Platform-Independent code into natural language text
- The challenge is not the transformation as such but
  - what is an appropriate abstraction?
  - how are the concepts of the metamodel mapped into linguistic concepts?
  - (e.g. should O\_OBJ be mapped to mkCN, mkN or mkPN?)
- The approach needs industrial evaluation