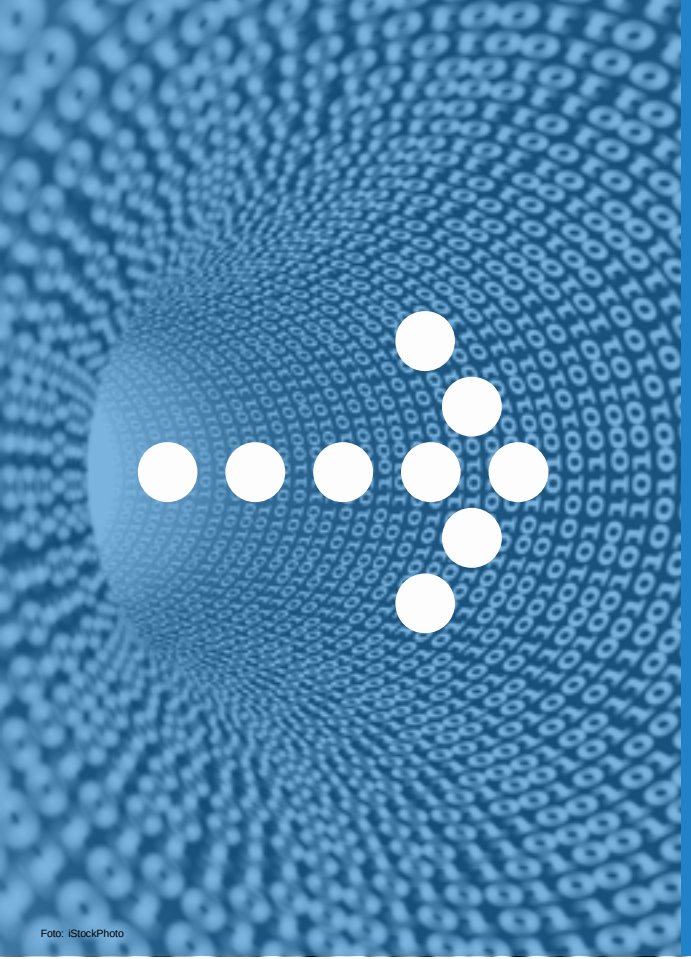

Simulation-driven automatic textual report generation for staff training

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Automated reporting in staff training

Timely and accurate **information is a critical resource in decision-making**.

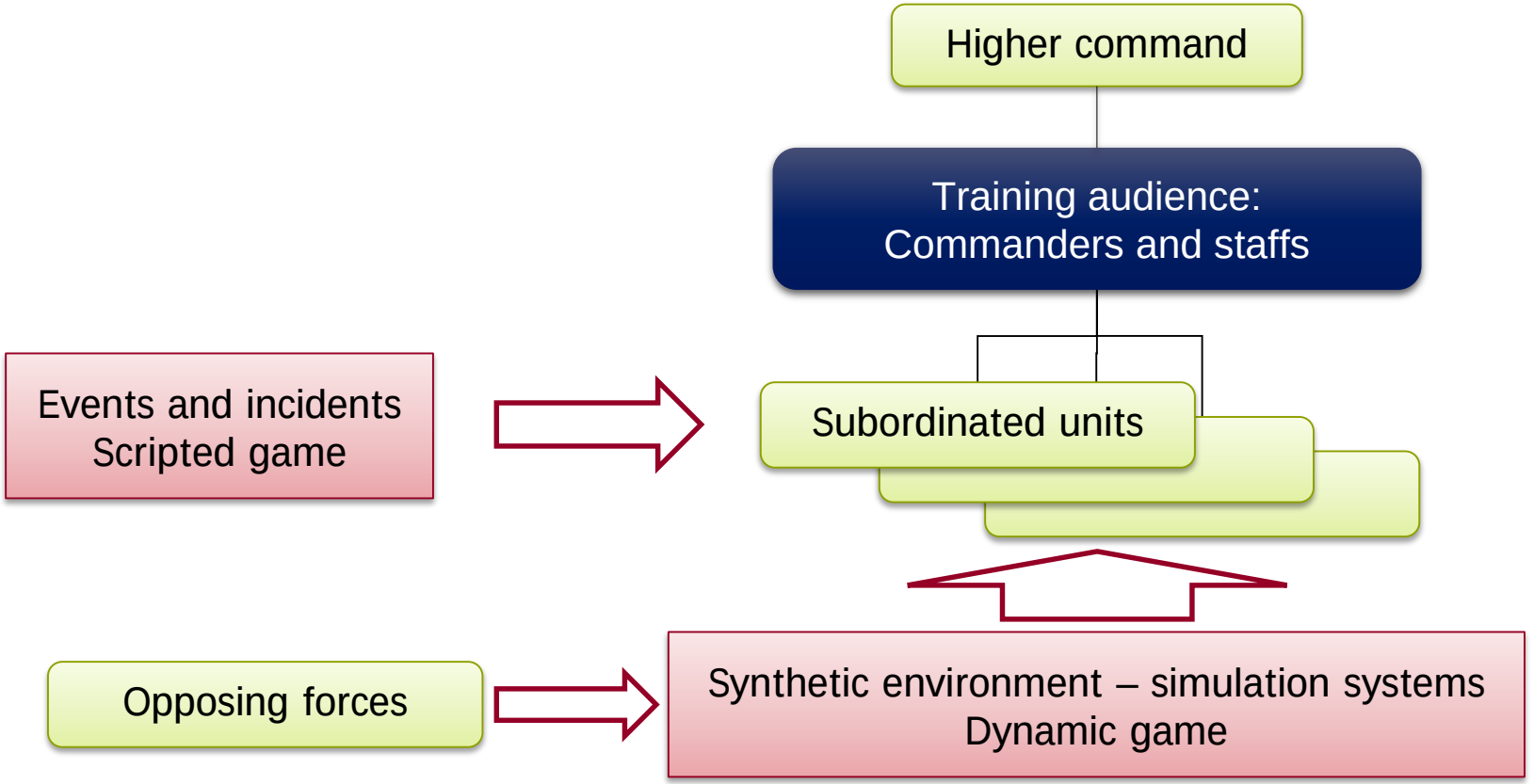
- Problem:
  Training commanders and their staffs is a challenge of supplying the staffs with a relevant **flow of information**

- Goal:
  Extract information from **simulation systems** and automatically create **textual reports**

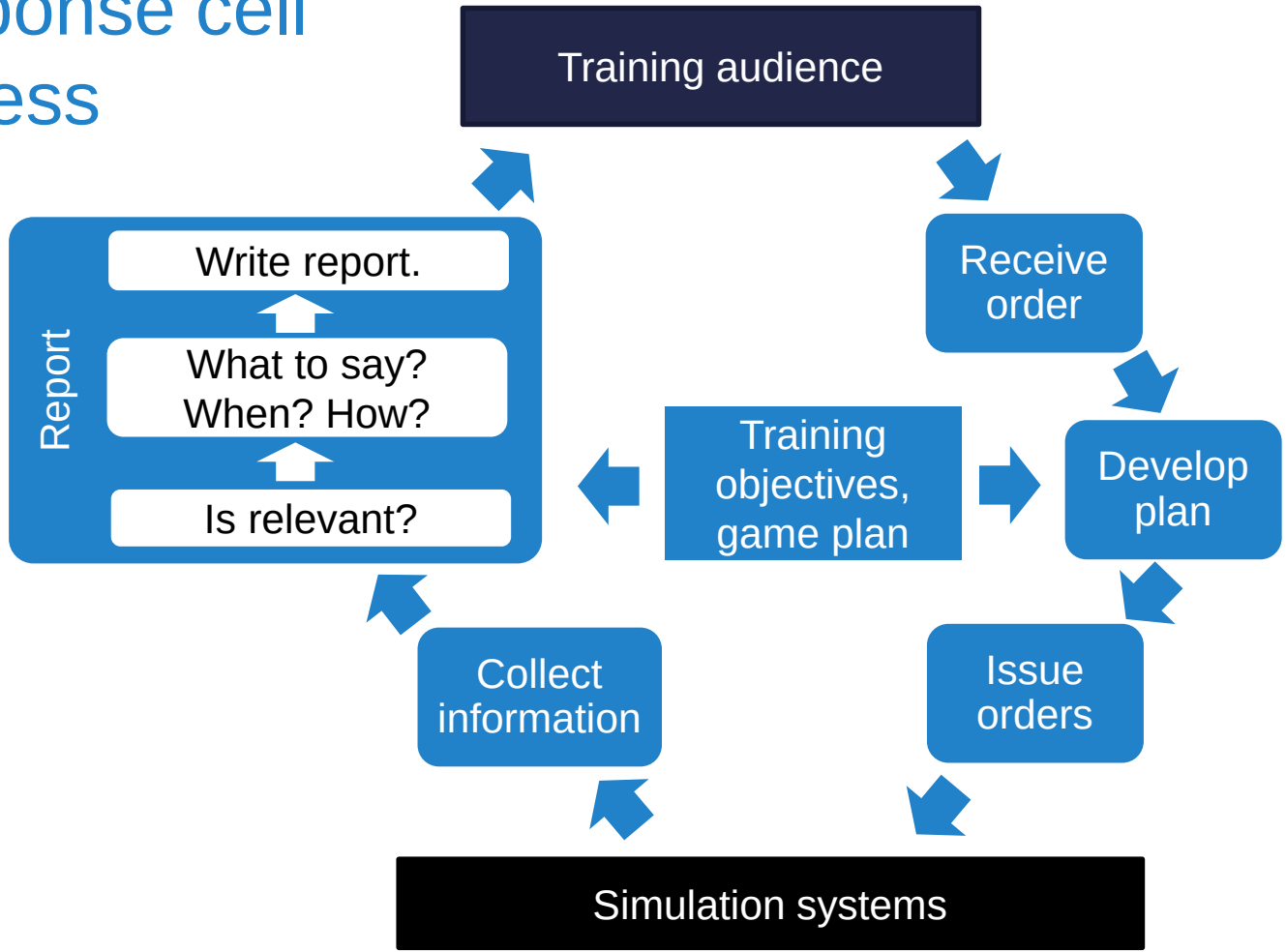
Agenda

- Command post exercises, information need
- Automatic textual report generation
- Use case
- Prototype implementation
- Experiences from development & testing

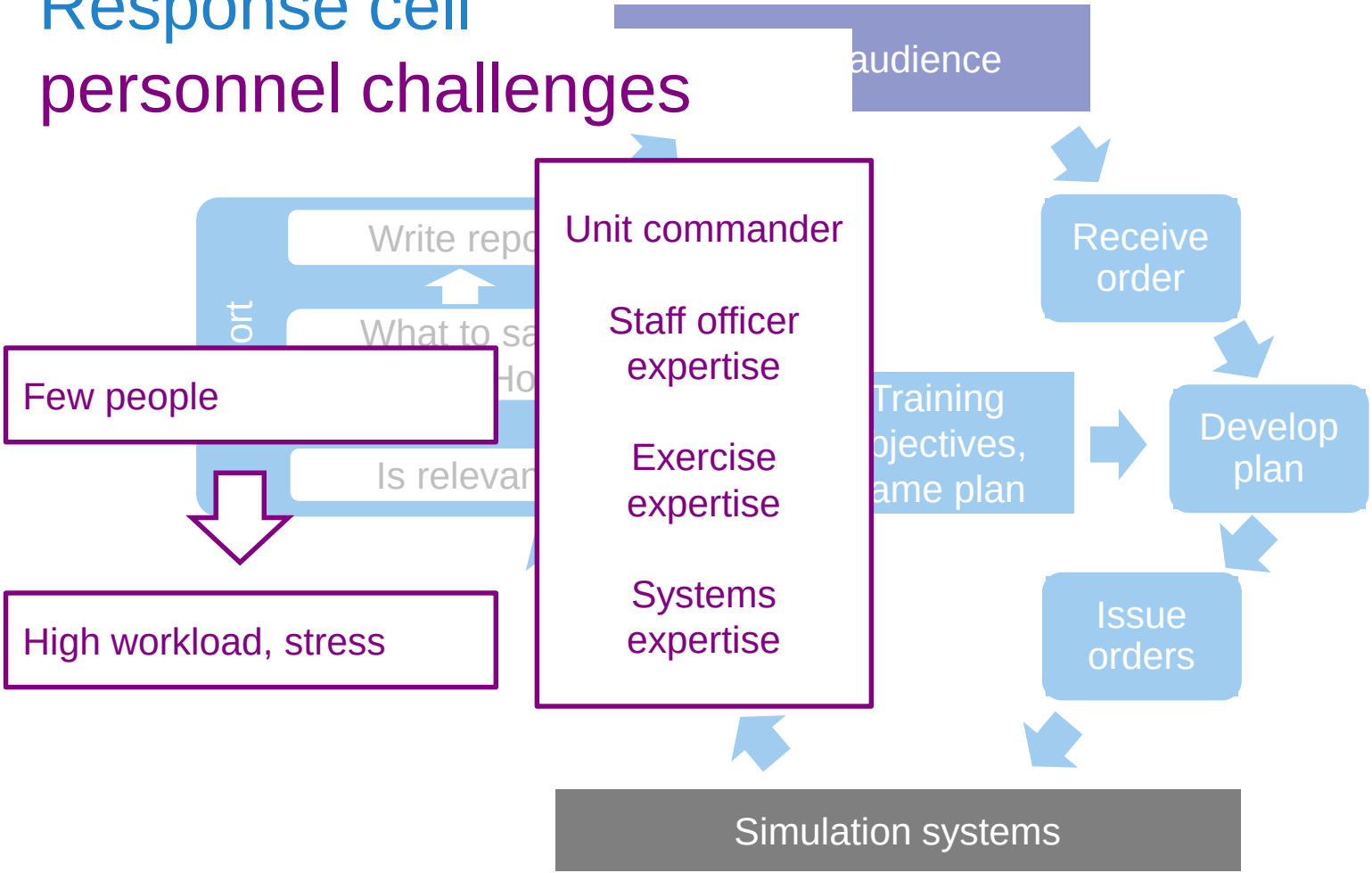
Staff training by command post exercises



Response cell process



Response cell personnel challenges



Information challenges

Few people

High workload, stress

Unit commander

Staff officer expertise

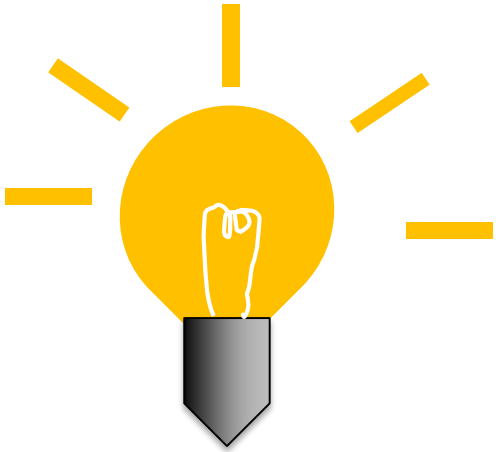
Exercise expertise

Systems expertise

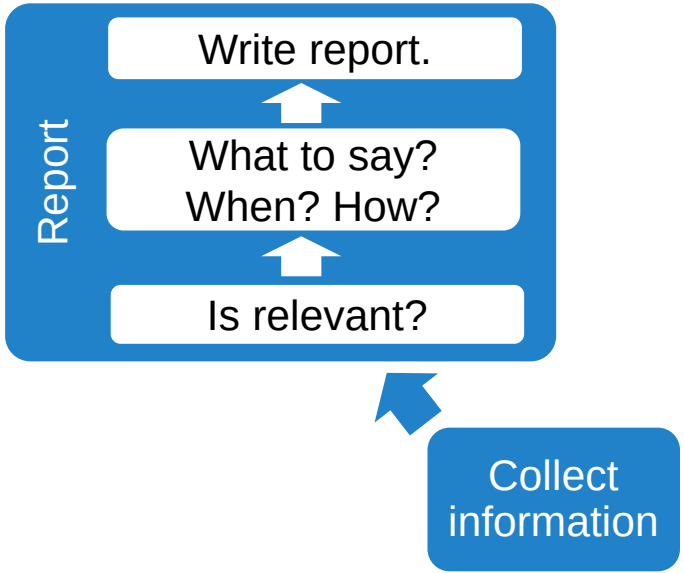
Response cell risks
- Too few reports of desired quality
- Errors, infidelity and incorrectness
- Deviation from synthetic arena

Training audience risks
- Non-realistic stimuli
- Negative training
- Non-efficient training
- Training objectives not fulfilled

Creativity



Report generation



Report generation: objective

Generate textual reports

- Reliable and believable, as if written by a human staff,
- With relevant quality and quantity

Simulation system independent

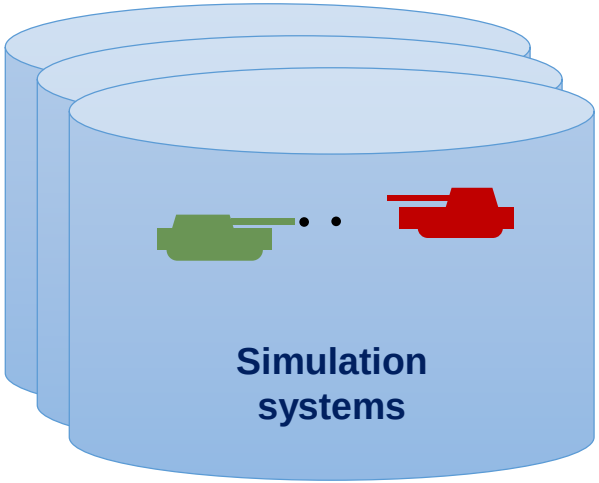
- Used in federation with several simulation systems

Proof of concept

- Develop prototype
- Test during exercises

Gather requirements

Use case: intelligence reports



Sensor message

HLA

Information
Size,
Activity,
Location,
Unit,
Time,
Equipment

Simple intelligence report example

Subject Description

Advancing pick-up trucks IVO Hällbybrunn

141th Ranger platoon in QL have observed about four (4) Nissan KingCabs and Toyota Landcruisers marching west at 50 km/h. Symbol of black flag with three white vertical lines.

DTG 251335.

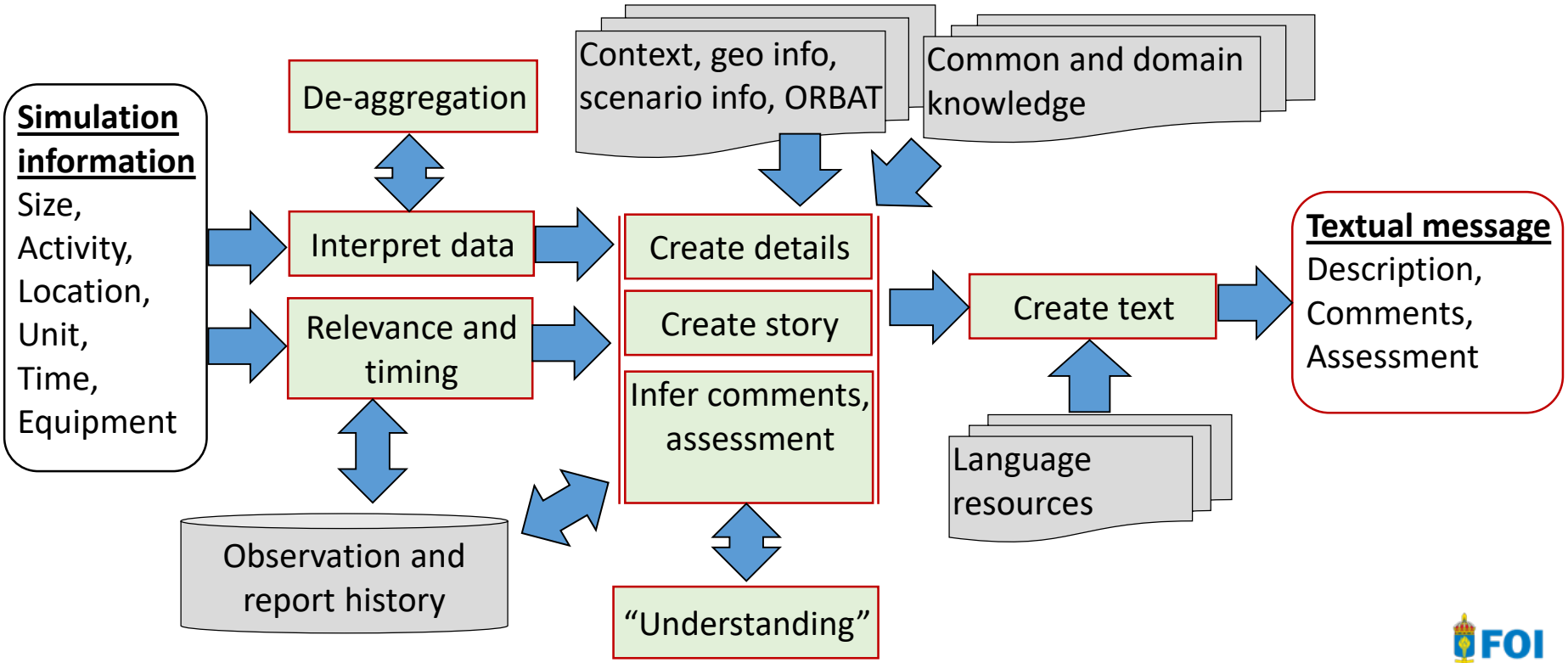
Comment

Vehicles with black and white insignias have previously been spotted in the QL area, reported at DTG 242035.

Subject Assessment

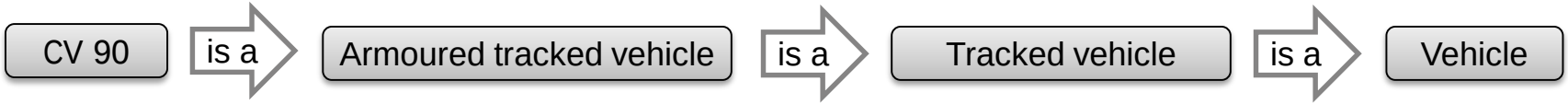
It is probable that the spotted vehicles belongs to a unit within Nobok irregular forces from Nobok Movement.

Schematic report generation process



Implementation details example

Crude simulation data	Verbalized information	
Simulation identifier: **`CV 90`**	Type of object:	military tracked armored fighting vehicle
	Typically called:	CV 90
	How to describe it:	boxed shaped with a slanting front and big turret and large main gun
Simulation identifier: **`Mi-8 Hip`**	Type of object:	armored rotary wing military transport aircraft
	Typically called:	military helicopter
	How to describe it:	twin engine on top, big round cockpit, rear tail rotor on left hand side, two double-mounted machine guns



[vehicles have been spotted] ”*in vicinity of Kungsängen, marching west on road E18 towards Enköping*”

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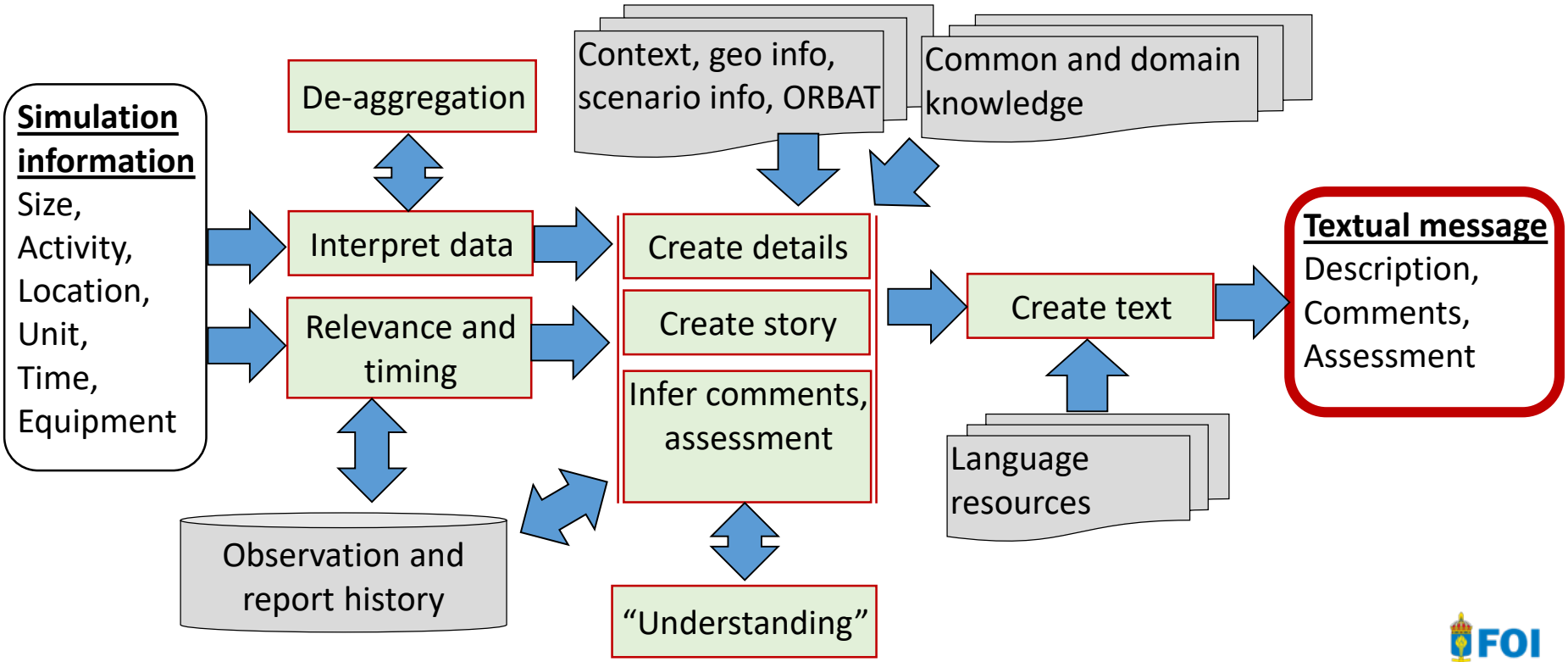
Schematic report generation process



A generated message

Subject Description

Advancing pick-up trucks IVO Hällbybrunn

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DTG 251335.

Comment

Vehicles with black and white insignias have previously been spotted in the QL area, reported at DTG 242035.

Subject Assessment

It is probable that the spotted vehicles belongs to a unit within Nobok irregular forces from Nobok Movement.

What did we learn?

The concept is viable

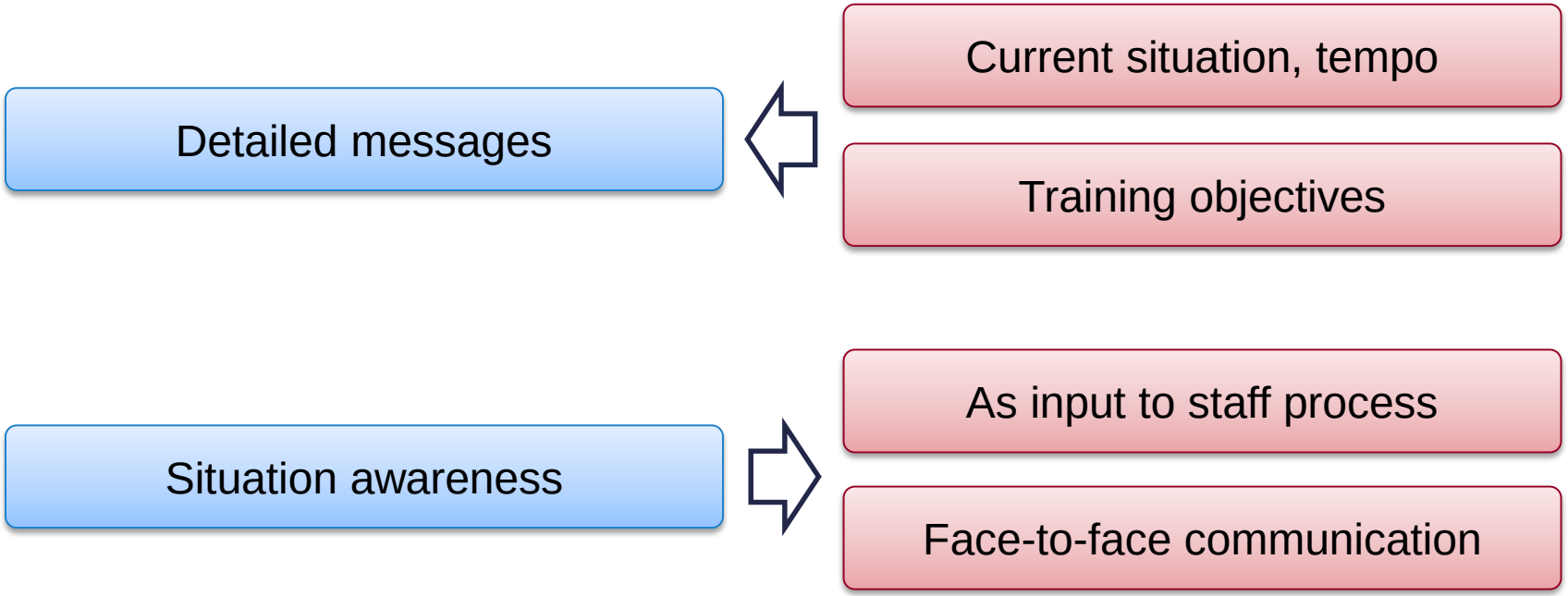
- The generated message was **deemed useful**.
- The **expressiveness and details** are especially highlighted as helpful for the staff.

Requirements / challanges

- Information
- Techniques

Response cell needs

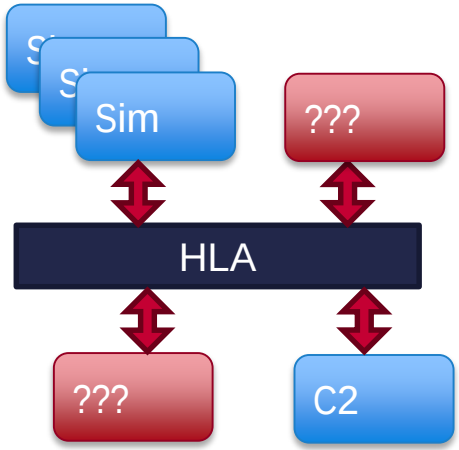
Response cell needs



Identified information and service requirements

Get data from sims

- SALUTE
- Actions and orders
- ORBAT, task org. holdings



Process information

- Sensor model
- De-aggregation
- Units' observation history
- Previous reports
- "Understanding", filtering and fusing

Add missing information

- Scenario information, insignias
- Geographical information
- Background knowledge, ontology
- Language, action verbs, abbr.

Interfacing

- GUI/editing
- Transmission to training audience

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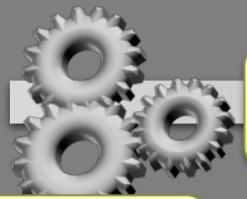
Summary

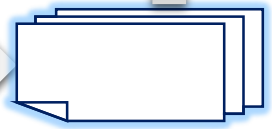
CONCEPT

System independent report generation

PROTOTYPE



Generated reports perceived useful



Proof of concept regarding technical challenges

Technical challenges

Methodological challenges

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