International Conference on Human Resource Development for Nuclear Power Programmes Building and Sustaining Capacity

Human Resources Management in the Belgian TSO Bel V

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Content of Presentation

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5. Training Programs
   1. Training Needs Assessment
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1. Belgian Regulatory Framework
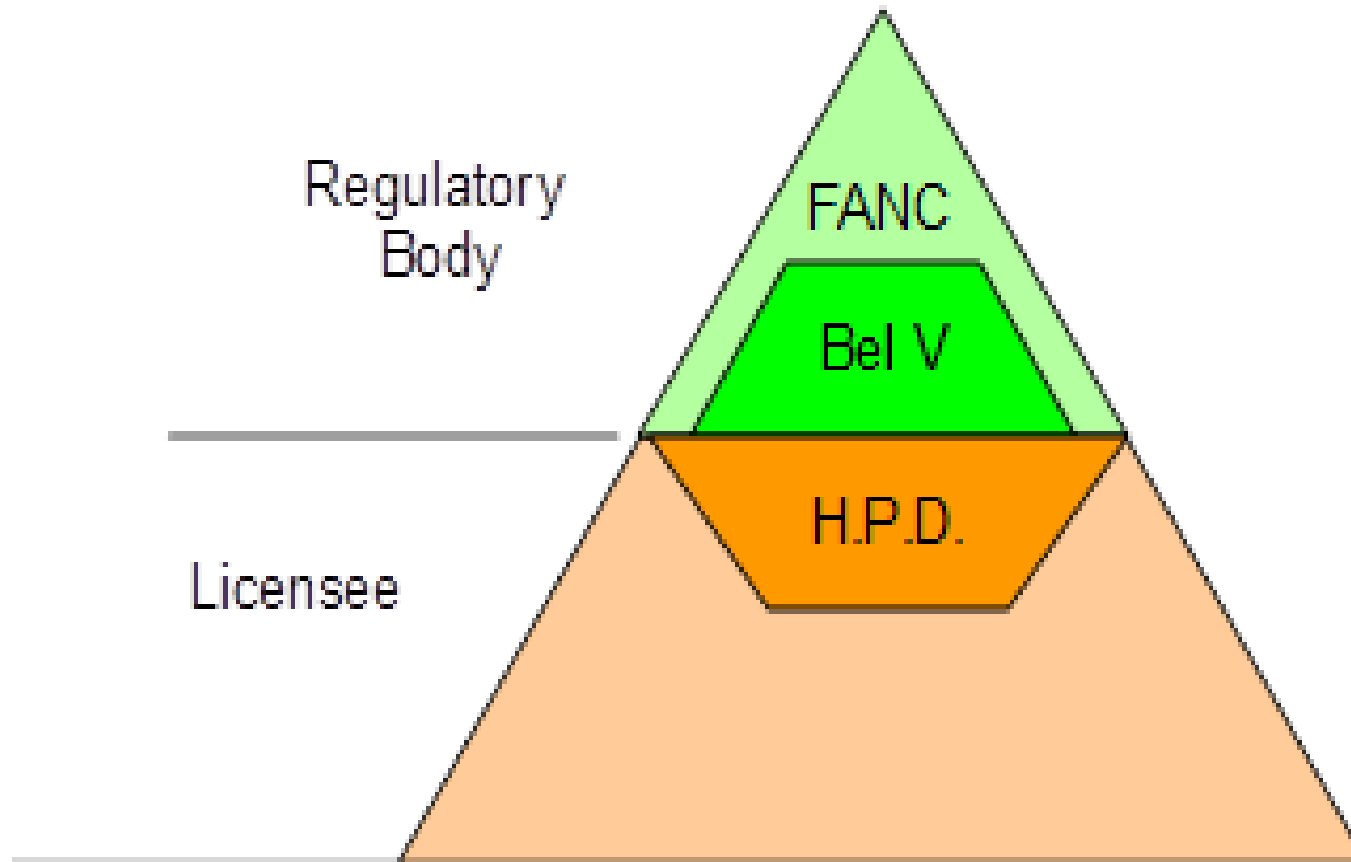
1. Belgian Regulatory Framework (ct'd)

General Objectives of Bel V

1. **Perform controls** in nuclear safety and radiation protection in all nuclear installations of Belgium, including the nuclear power units

2. **Advise** the Belgian Authorities in the development of nuclear **emergency plans**, and play a role in the management of nuclear or radiological crisis

3. Carry out and **assess analyses performed in nuclear safety and radiation protection** and provide expertise in these fields. Such activities can be performed in support of the Belgian Regulatory Authority (FANC) or for international or foreign organizations

2. Bel V Integrated Management System

Bel V Quality Management System embedded in Integrated Management System.

1. Quality Manual with Quality Policy and Quality Objectives

2. Definition of 12 processes
   ➢ Process mapping with Level 1, 2, (3), (4)

3. Development of procedures

2. Bel V Integrated Management System (ct'd)

A01 Manage Bel V

A02 Manage the accounts, Manage the projects

A03 Acceptance/Licensing of installations

A04 Operational inspection

A05 (reserve)

A06 Delivery and Management of expert services in NS and RP

A07 Management of Expertise and Technical Quality
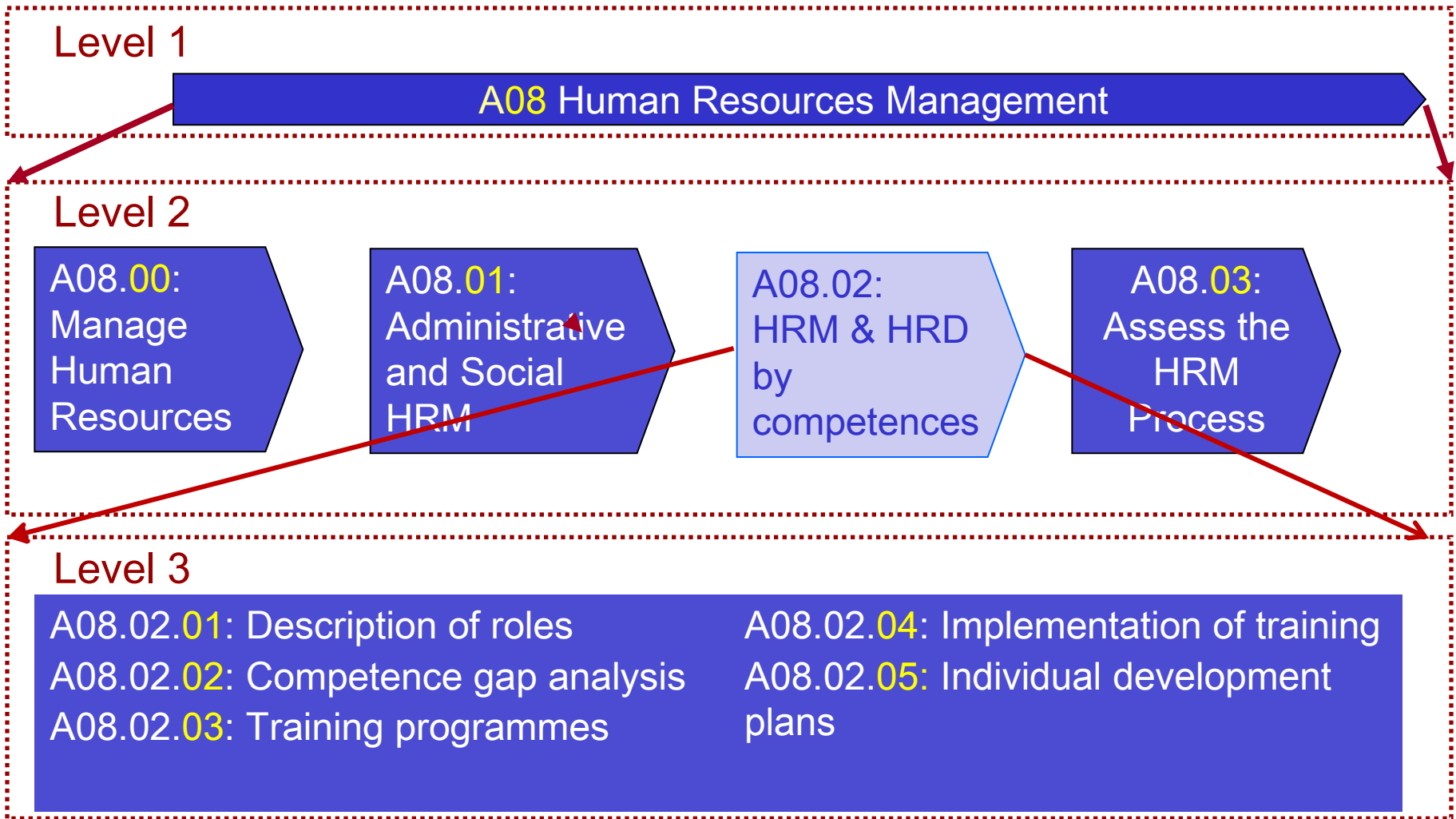
A08 Human Resources Management

A09 Purchasing Management

A10 Financial Management

A11 Support Management

A12 QMS Management

3.2. HRM by Competences

Level 1

A08 Human Resources Management

Level 2

A08.00: Manage Human Resources

A08.01: Administrative and Social HRM

A08.02: HRM & HRD by competences

A08.03: Assess the HRM Process

Level 3

A08.02.01: Description of roles

A08.02.02: Competence gap analysis

A08.02.03: Training programmes

A08.02.04: Implementation of training

A08.02.05: Individual development plans

3.2. HRM by Competences (ct'd)

Reorganisation of HRM Process in October 2013

⟶ **all activities related to Competence Management & Training included in A08,** with the following steps:

1. Role descriptions with associated tasks (36 roles)
2. Competence gap analysis using SARCoN

   (SARCoN = Systematic Assessment of Regulatory Competence Needs)
3. Training programmes for staff based on Training Needs Assessment (SAT2, SAT3)
4. Implementation of training based on Training programmes (SAT4, SAT5)
5. Management of individual development plans
6. Yearly evaluation of personnel performance

3.2. HRM by Competences (ct'd)

1st STEP in the process: <u>Role descriptions</u>

All described following the **template** below:

1. Mission statement of the role

2. Description of activities and tasks

3. Hierarchical and functional position

4. Qualification requirements

5. Competence requirements

Difference between

Qualification requirements

- Qualification can be defined as the combination of individual elements of the education, training and experience needed to meet the role/function description requirements.

Competence requirements

- Required competences for a given role, based on list of KSAs
- Competence = ability to put KSA into practice
- KSA = Knowledge – Skill - Attitude

3.2. HRM by Competences (ct'd)

Competence requirements

Required competences for the role are defined by the supervisor on the basis of a reference list of KSAs. KSAs are associated to each of the quadrant of the IAEA competence model: refer to the procedure Q080202-01 describing the methodology for managing the competences of the Bel V staff (« competence gap analysis »)

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Quadrant Model of Competence

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4. Competences related to personal and interpersonal effectiveness
 	
  4.1 Analytical thinking and problem solving
  4.2 Personal effectiveness and Self Management
  4.3 Communication
  4.4 Team work
  4.5 Management and Leadership
  4.6 Safety Culture
	1. Competences related to the legal, regulatory and organizational basis
	
	  1.1 Legal basis
	  1.2 Regulatory policies and approaches
	  1.3 Regulations and regulatory guides
	  1.4 Management system

3. Competences related to regulatory body's practices
 	
  3.1 Review & Assessment
  3.2 Authorization
  3.3 Inspection
  3.4 Enforcement
  3.5 Development of regulations and guides
	2. Competences related to technical disciplines
	
	  2.1 Basic Science & Technology Competence
	  2.2 Advanced Science & Technology Competence
	  2.3 Specialized Science & Technology Competence

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4. Competence Gap Analysis (ct'd)

Step-by-step approach recommended by the SARCoN guidelines to identify the gap between the existing and the required competences.
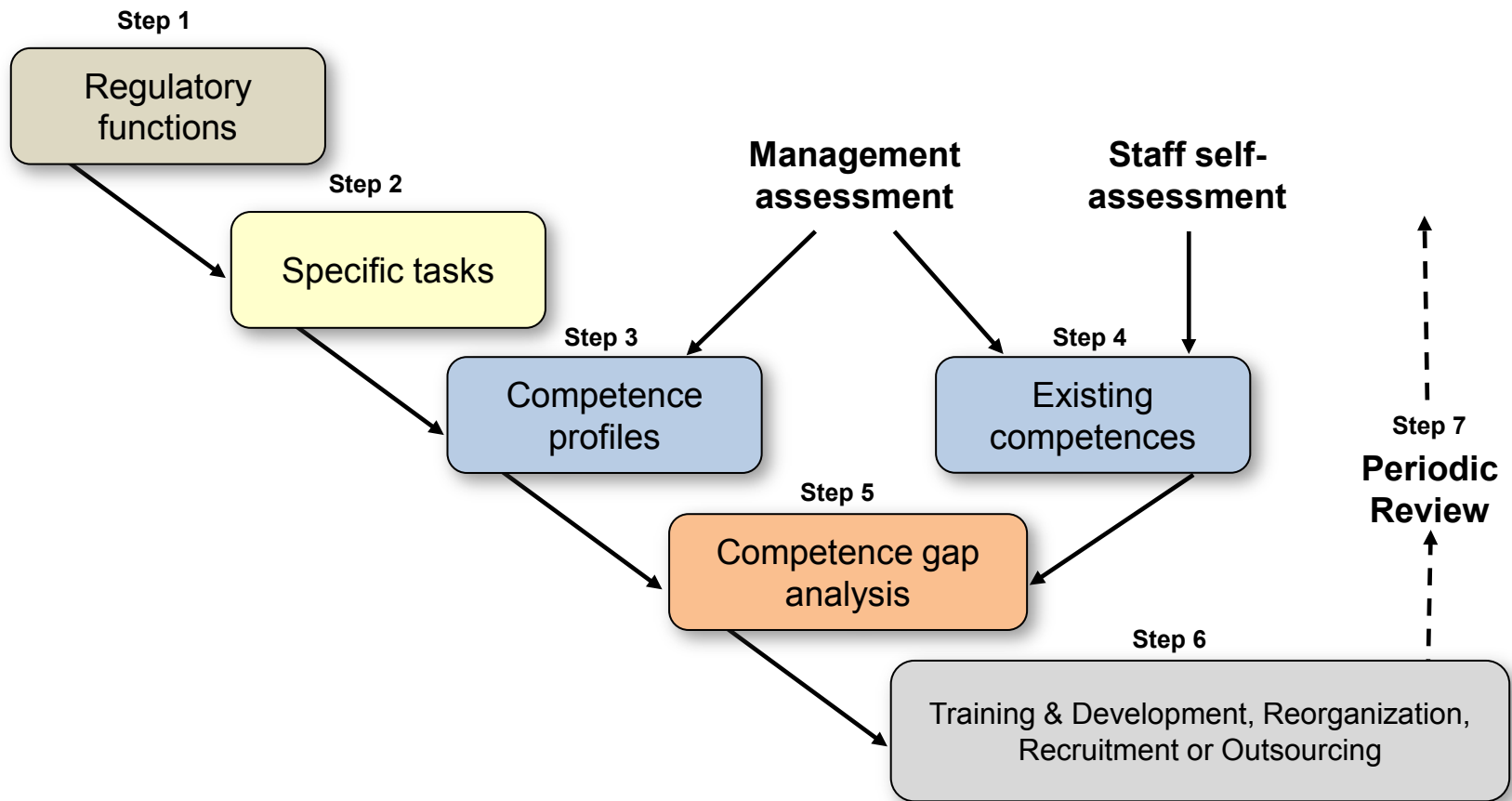
Competence Gap Analysis PROCEDURE

Content of Bel V procedure describing the CGA process:

1. General description of Competence Management

2. Description of Competence model IAEA (4 quadrants)

3. List of required competences
   1. Determine the main tasks related to each role in the role descriptions (steps 1 & 2)
   2. Develop a reference list of KSAs corresponding to the functions/tasks (step 3)

4. Implementation of SARCoN
   1. Determine the KSAs levels required for all functions (competence profiles) (step 3)
   2. Determine the KSAs level existing (self-assessment) (step 4)
   3. Evaluate the results of the self-assessment (with coach/supervisor) (step 4)
   4. Carry out the competence gap analysis (step 5)
   5. Analyse the gaps in order to produce a map of gaps for the whole organisation
   6. Prioritize the gaps and allocate resources to fill (some of) the gaps (step 6)

5. Methods of acquiring competences

SARCoN Pilot application

Steps 1-2 have been carried out.

For Step 3 $\longrightarrow$ 2 competence profiles developed.

Pilot Application for step 4 of step-by-step approach:

1. Self-assessment of existing level of competence

   Fill in the existing level of KSA: 0, 1, 2 or 3 for all KSAs in Quadrants 1,2,3

2. Evaluation interview with coach or supervisor

   Compare the required KSA with the existing ones; validation of self-assessment with coach or supervisor

- Step 5: carry out the competence gap analysis using the software tool (by the training manager); produce a map of gaps for each staff member involved in the pilot application.

- Step 6: **prioritize** the gaps according to their importance and **decide** with the supervisors how to fill the gaps

5. Training Programs

Reorganisation of the Belgian nuclear regulatory sector in 2008

– Reinforcement of the resources & expertise
– More than 30 new engineers hired during last 6 years

Increased training needs

Systematic Approach to Training

- Training is 1 of methods to fill gaps (besides recruitment & outsourcing)

- When training is chosen, Bel V adopts IAEA Systematic Approach to Training (SAT), specifically developed to reach and maintain competences.

⟹ *5 interrelated phases*.

Systematic Approach to Training (ct'd)

1. **Analysis of training needs**
   – Organisational chart & role descriptions, including associated qualification/competence requirements
   – Educational profile and professional experience
   – Competence gap analysis
   – Training Needs Assessment (TNA)

2. **Design of training programmes**
   – Developed for each staff member, in particular for newcomers

3. **Development of training courses or materials**
   – Finding best available and appropriate training courses or materials

4. **Implementation of training**
   – By various methods: self-study, distant learning, internal and external classroom training sessions, on-the-job training or tutoring

5. **Evaluation of the training effectiveness**

Systematic Approach to Training (ct'd)

- Most of the training efforts towards **newcomers**

- An **initial training programme** for them includes
  - Work practices specific to Bel V
  - Basic technical training (Legislative and regulatory framework, Regulatory practices, Basic technical disciplines)
  - Specific Technical Training (specific to the position)
  - Non technical training (soft skills, attitudes)

- Bel V has developed internal classroom training sessions for newcomers structured on the IAEA **SARCoN** distributing training subjects in **4 quadrants**
  - Legal basis & regulatory processes (Q1)
  - Technical disciplines (Q2)
  - Regulatory practices (Q3)
  - Personal & interpersonal effectiveness (Q4)

Systematic Approach to Training (ct'd)

- **23 technical oriented sessions**
  - **5 in Q1**
    (legal & regulatory framework in Belgium, introduction to SAR…)
  - **14 in Q2**
    (basic principles of NS & RP, deterministic & probabilistic safety analysis, Safety culture, industrial safety, Emergency Preparedness & response, INES…)
  - **4 in Q3**
    (regulatory practices for siting, licensing, inspections & modifications, decommissioning)

- **50 sessions given once or twice since 10/2009 (in 4 years)**
  - **Given by senior experts** (mainly from FANC or Bel V)

- **Q4 outsourced**
  - Communication, meeting and management techniques…

Systematic Approach to Training (ct'd)

Quadrant 1 (legal basis and regulatory processes)

Q1-1 QMS System

Q1-2 Legal and Regulatory Framework in Belgium

Q1-3 Context and activities of WENRA, Belgian Action Plan

Q1-4 NS Rules, Future Regulatory Framework

Q1-5 Introduction to Safety Analysis Reports of nuclear installations

Quadrant 3 (regulatory practices: RC)

Q3-1 Regulatory practices for siting

Q3-2 Regulatory practices for construction and licensing

Q3-3 Regulatory practices for inspections and modifications

Q3-4 Regulatory practices for decommissioning

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Systematic Approach to Training (6)

Quadrant 2 (technical disciplines: RS, NS)

Q2-RS-1 Basics of radiation protection
Q2-NS-1 Basic principles of Nuclear Safety / Basic safety concepts
Q2-NS-2 Deterministic Safety Analysis
Q2-NS-3 Probabilistic Safety Analysis
Q2-NS-4 Accident Management
Q2-NS-5 Operational Safety
Q2-NS-6 Safety Culture
Q2-NS-7 Scope&Boundaries of accident analysis
Q2-Other-1 Industrial Safety
Q2-Other-2 Physical protection
Q2-Other-3 Transport of radioactive materials
Q2-Other-4 Emergency Planning
Q2-Other-5 International Nuclear Event Scale (INES)
Q2-Other-6 Class 1 installations other than NPPs

6. Conclusions

➢ **2013: Reorganisation of HRM process to include SARCoN**

    ➢ **Role descriptions (+ associated tasks) X 2**

    ➢ **CGA using SARCoN methodology included**

➢ **PILOT application of CGA with SARCoN launched & completed**

    ➢ **2 competence profiles (for 2 technical key roles) by 10 test persons**

    ➢ **Self-assessment validated with coach/supervisor**

    ➢ **Training Manager has performed CGA.**

6. Conclusions (ct'd)

➢ Significant differences identified in interpretation of KSA content & level

➢ <u>Next steps</u>:

    ➢ Thorough evaluation of pilot application

    ➢ Define more detailed guidance !!

➢ <u>Future challenge</u>: Larger scale use of SARCoN

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