# The role of homogenization in the licensing process in Finland





# **Background**

- In Posiva's construction license application homogenisation in KBS-3 assessed only with computer simulations (code\_bright (BBM) and Plaxis)
- "Validation" within EBS task force and Theresa
  - only poor options available

⇒ Develop a validated method to assess homogenisation

## **Objective**

 justify how "heterogeneous" design parameters\* can be used

\*design parameters for blocks and pellets:

- montmorillonite content
- density
- block filling ratio
- thickness of pellet filled slots

## Scope

#### 1. Define prototype

define what needs to be solved

#### 2. Conceptual models

review conceptual models available

#### 3. Experimental work

prototype performance, missing parameters, validation data

#### 4. Computer simulations

use existing software implementations

## 5. Justify guidelines for design parameters

- formulation of scaling principles
- industry standard method to assess homogenisation of heterogeneous systems
- feedback to design parameters

#### Schedule – 1/2

early 2020's Start of disposal Full-scale system tests Test operation and commissioning Application for 2020 Elaboration of arguments & DEMONSTRATION Construction of disposal facility Application for construction license for compliance with requirements Construction of ONKALO and confirming investigations at Olkiluoto Decision in principle by Government and Parliament 2001 Site selection Site investigations Government's decision on 1983 objectives and timetable Start of feasibility studies of geologic disposal

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### Schedule - 2/2

- Work can begin on 4.1.2016
- Results need to be published by mid-2020

