

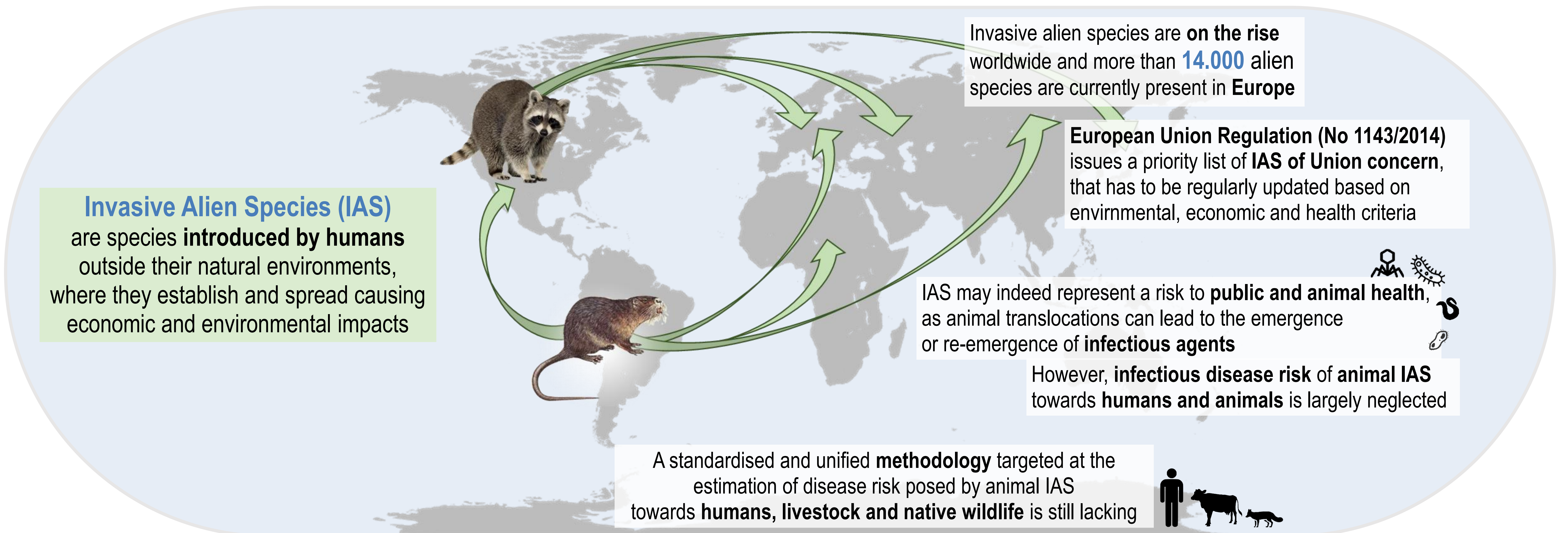
# DEVELOPMENT OF A QUALITATIVE EXPERT-BASED TOOL TO ASSESS INVASIVE ALIEN SPECIES DISEASE RISK

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## BACKGROUND



## AIMS

- Development of a **tool** to assess **infectious disease risk** of mammal IAS towards humans, livestock and local wildlife, usable by a multidisciplinary working group of experts
- To allow local administrators to **prioritise** prevention and management actions on IAS based on health risks

## MATERIAL and METHODS

**Identification of risk pathways and risk factors**, in collaboration with experts in wildlife epidemiology



example

- **Risk pathways:** chain of steps that may lead to **target infection** (humans, livestock or local wildlife)
  - Local host species considered as *communities*: wild host community (WHC) and domestic host community (DHC)
  - Two main *pathways*: vector-borne diseases and non vector-borne diseases
- **Factors** influencing pathway steps related to the IAS, the local communities of hosts and vectors, the target and the geographic area under assessment



**Development of the risk assessment model**

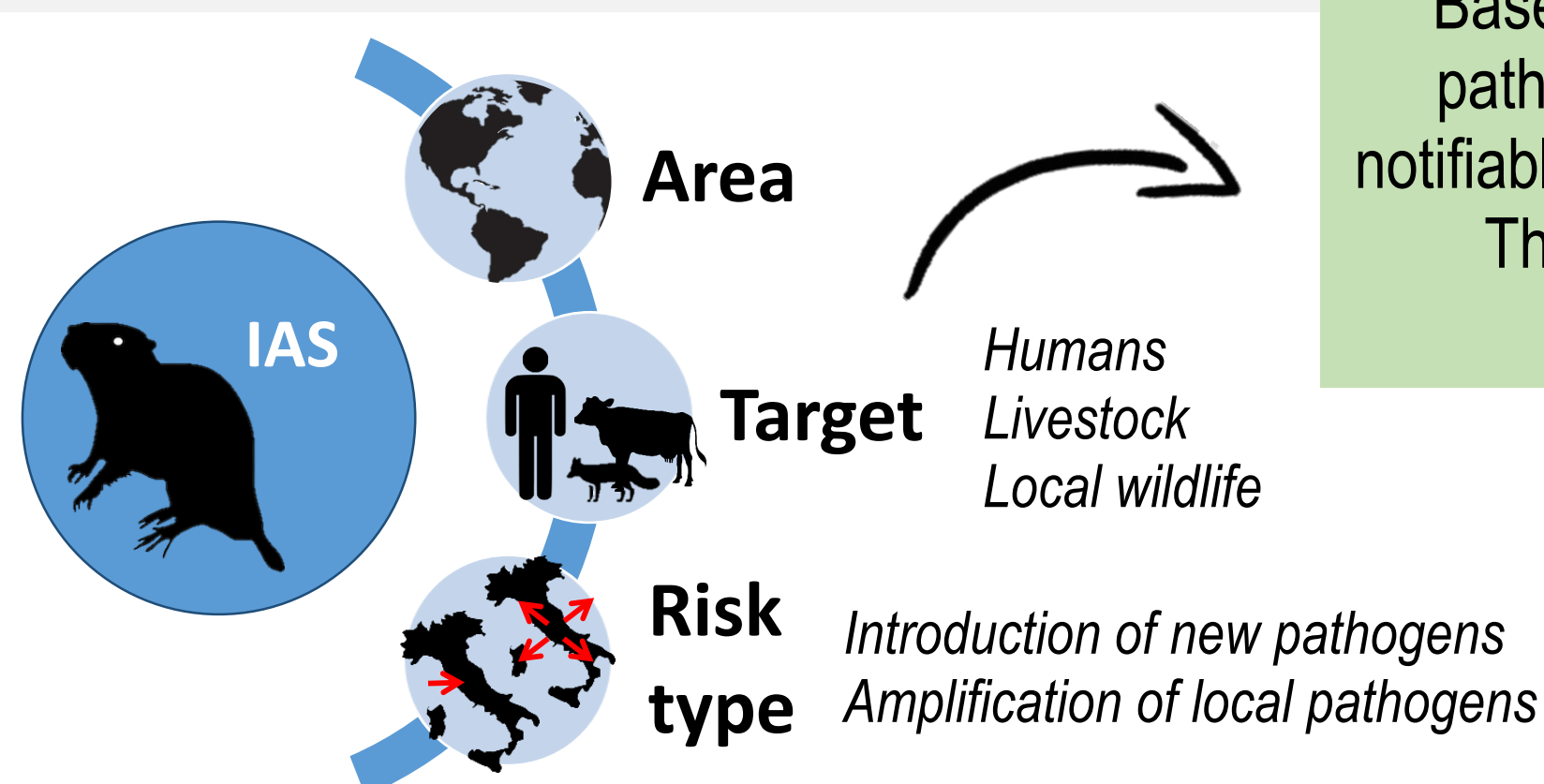
- Model based on two **qualitative** matrixes: a matrix of conditional probabilities for dependent steps and a matrix for independent events where an increase of risk is possible



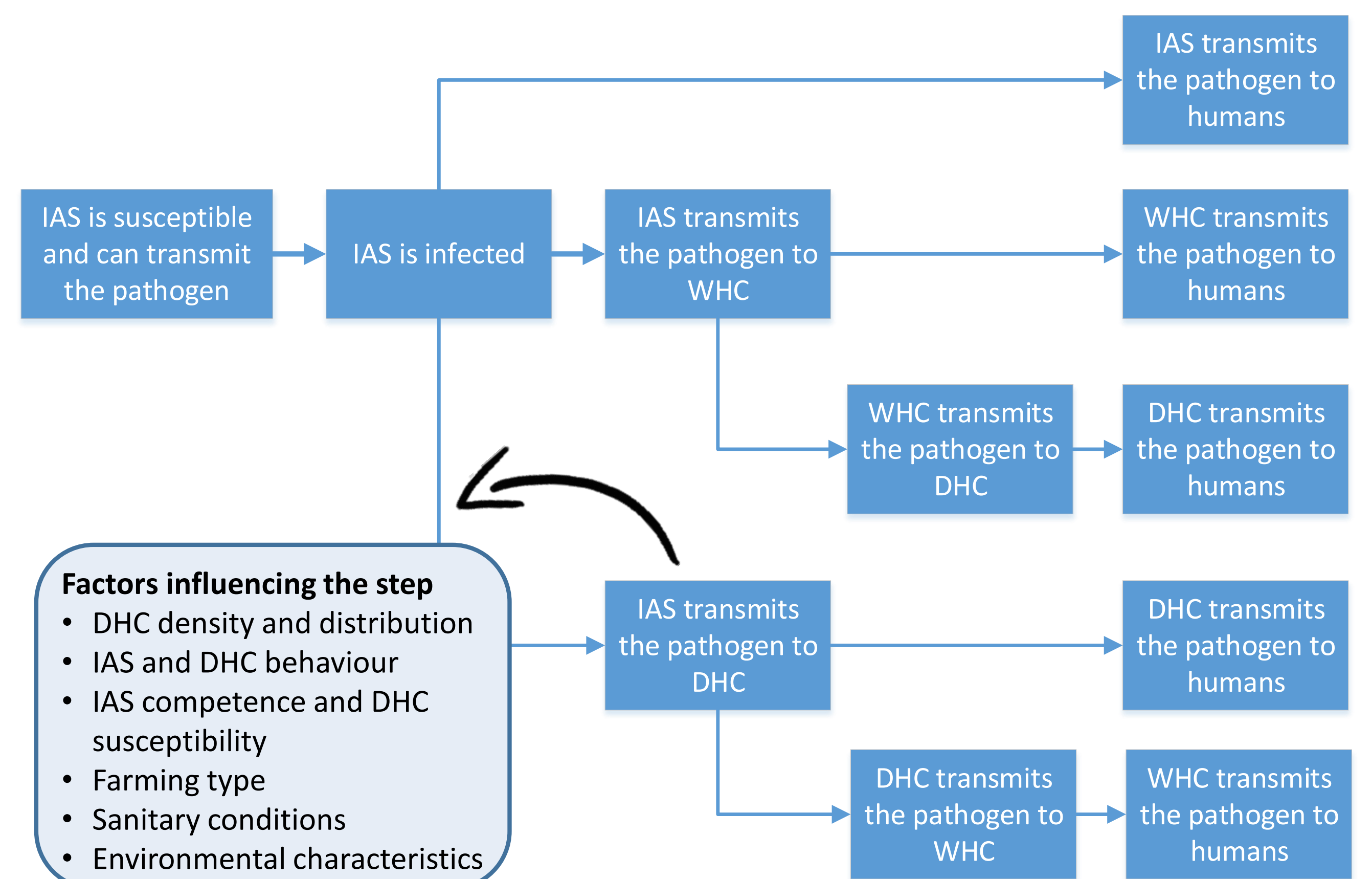
**Questionnaire development**

- Questions covering pathways steps with explicit reference to the factors that have to be considered when answering
- Answers in qualitative classes (high, medium, low, negligible) with uncertainty level (high, medium, low)
- Based on the risk assessment aim, experts can choose:

Based on the **Target** selected, different pathogens listed in international lists of notifiable diseases are shown to respondents. They have to answer the questions for each pathogen



**Pathway leading to human infection for a non vector-borne pathogen**



## PRELIMINARY RESULTS

**GRAY SQUIREL** *Sciurus carolinensis* and **RACCOON** *Procyon lotor*

Zoonotic pathogens at **NEGLECTIBLE, LOW, MEDIUM, HIGH** risk of introduction/amplification and transmission to **HUMANS** in **ITALY**

