

VILNIAUS UNIVERSITETAS  
MATEMATIKOS IR INFORMATIKOS FAKULTETAS

## **Requirements modeling**

### **Reikalavimų modeliavimas**

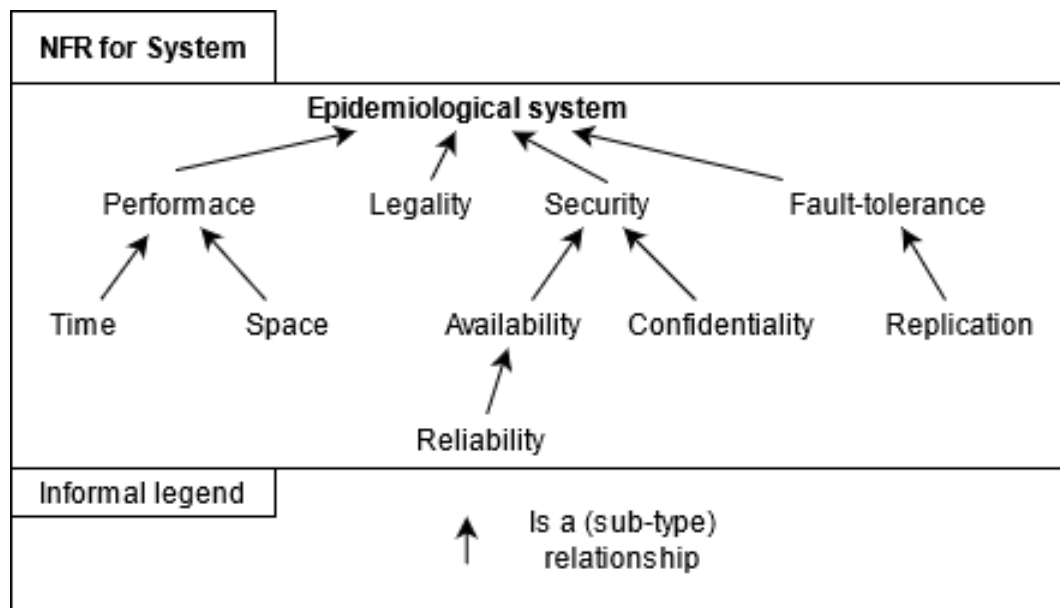
Programų sistemų inžinerijos modeliai ir metodai laboratorinis darbas 2

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## CONTENTS

1. NFR TYPE CATALOGUE .....	2
2. MODELLING OF THE NON-FUNCTIONAL REQUIREMENTS .....	3
2.1. Self-isolation .....	3
2.2. Infected patients .....	5
2.3. Dangerous countries .....	7
3. IDENTIFYING AND MODELLING OF POSSIBLE OPERATIONALIZATIONS FOR NFR .....	9
3.1. Self-isolation .....	9
3.2. Infected patients .....	10
3.3. Dangerous countries .....	11
4. DETECTING AND MODELLING OF IMPLICIT INTERDEPENDENCIES AMONG NFR .....	12
4.1. Chosen operationalizations .....	13
4.2. Making decisions.....	14
5. CONCLUSIONS ABOUT AN ACTOR DEPENDENCY .....	15
CONCLUSIONS .....	16

# 1. NFR type catalogue

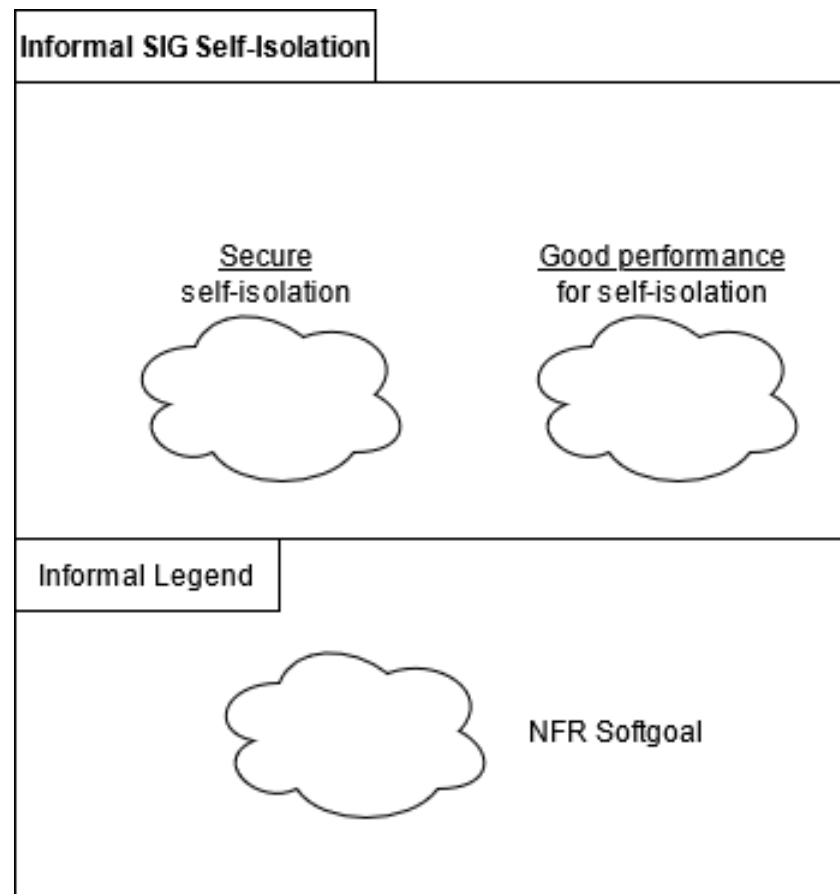


pic 1. NFR diagram

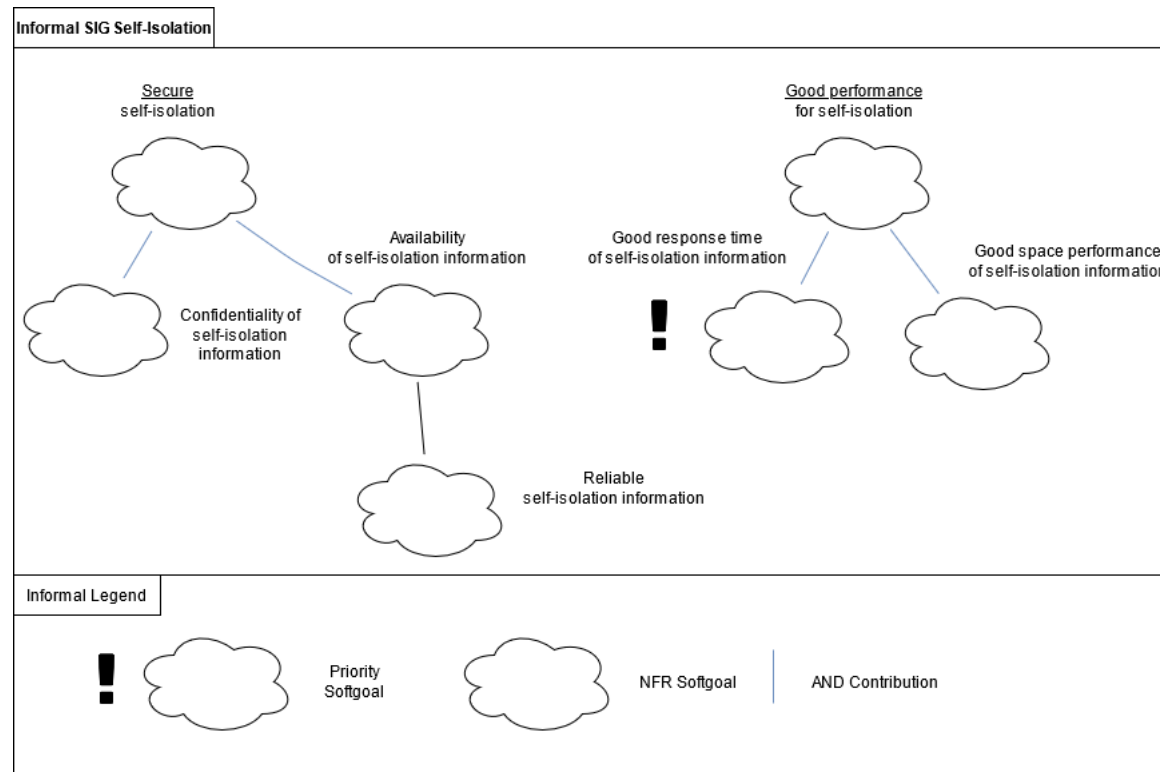
- **Time** - System is monitoring the epidemic therefore it's processes or workflows have to be efficient time-wise.
- **Space** - since the system will contain lots of different data (e.g. person's geographical coordinates), data must be stored efficiently.
- **Reliability** - Tracking the state of the epidemic must be ensured 24/7 to not miss any crucial data or trends.
- **Confidentiality** - epidemiological system must treat sensitive person information (e.g. received medical records) with respect to ensure systems credibility.
- **Legality** - due to the fact the the epidemiological system will deal with sensitive information, data handling must be in compliance with LT and EU data laws as well as GDPR.
- **Replication** - non sensitive data must have duplicate records stored to increase the system's fault-tolerance.

## 2. Modelling of the non-functional requirements

### 2.1. Self-isolation

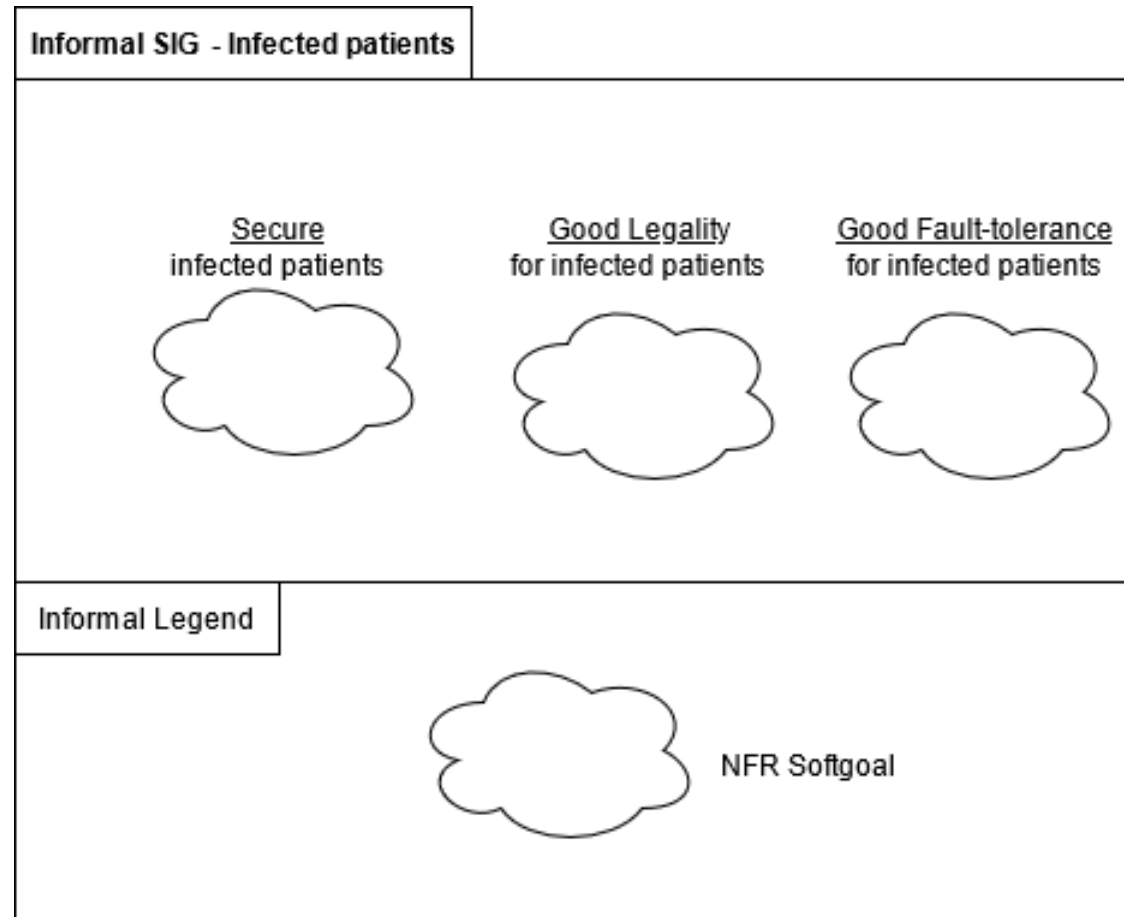


pic 2. Self Isolation - Initial Software Dependency Graph

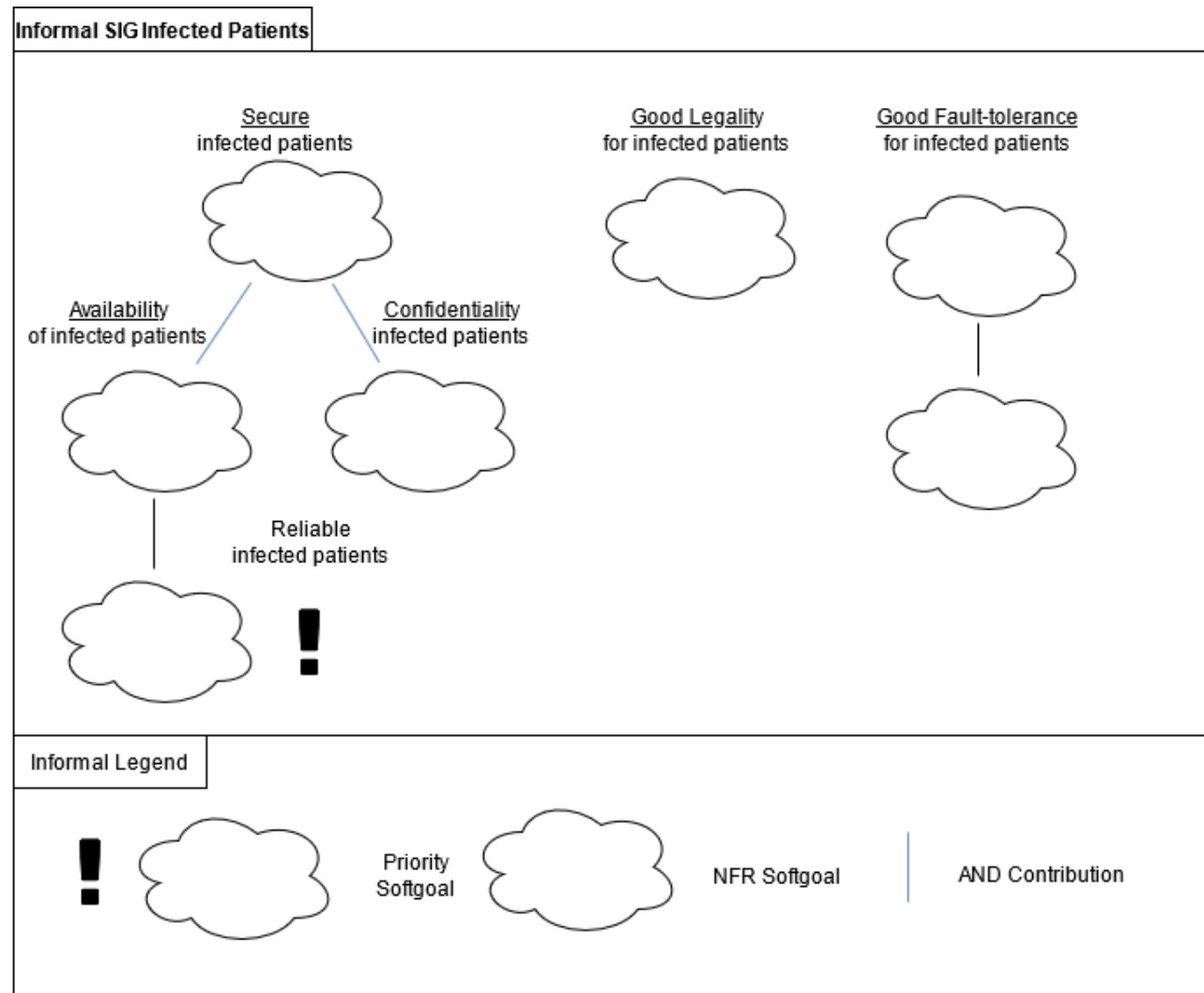


pic 3. Self Isolation - Decomposing NFRs

## 2.2. Infected patients

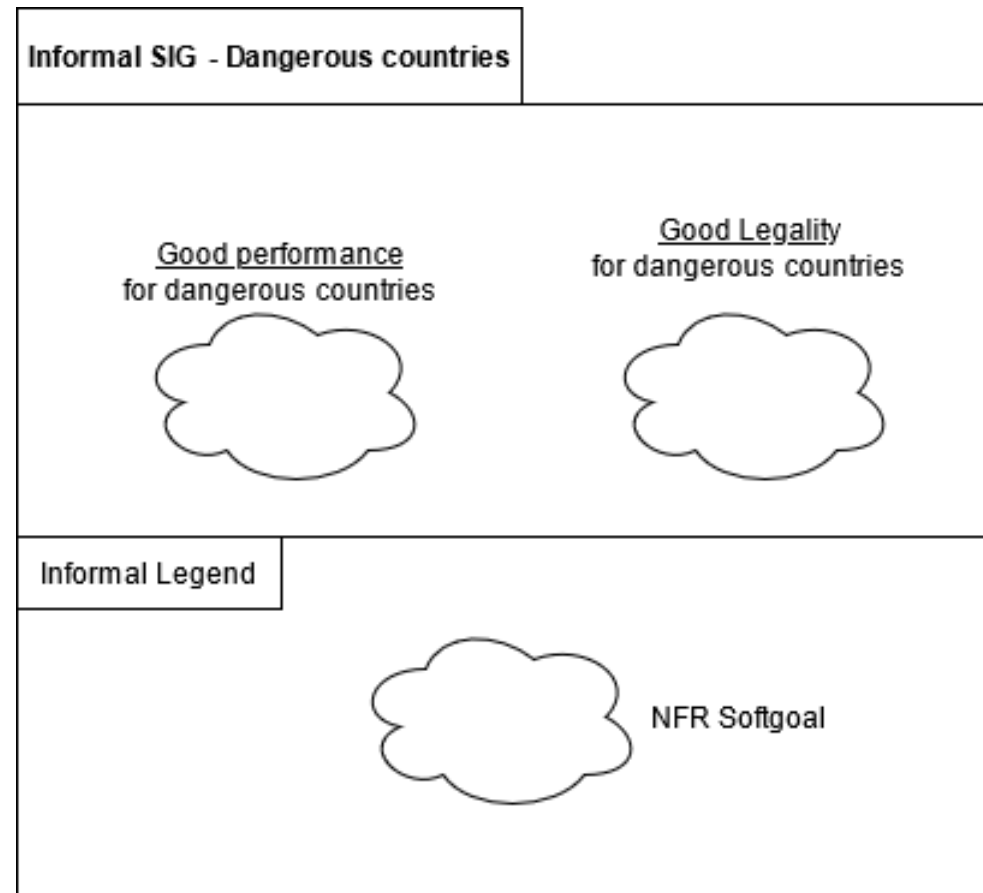


pic 4. Infected Patients - Initial Software Dependency Graph



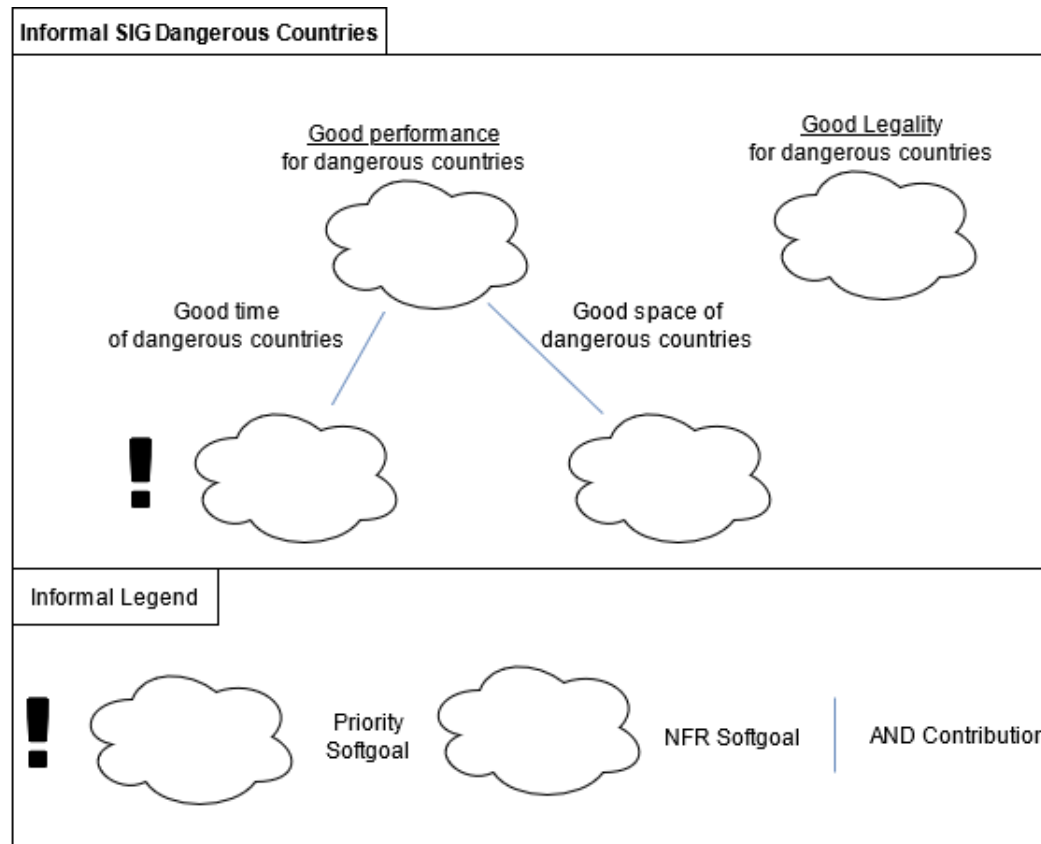
pic 5. Infected Patients - Decomposing NFRs

### 2.3. Dangerous countries



pic 6. Dangerous Countries - Initial Software Dependency Graph

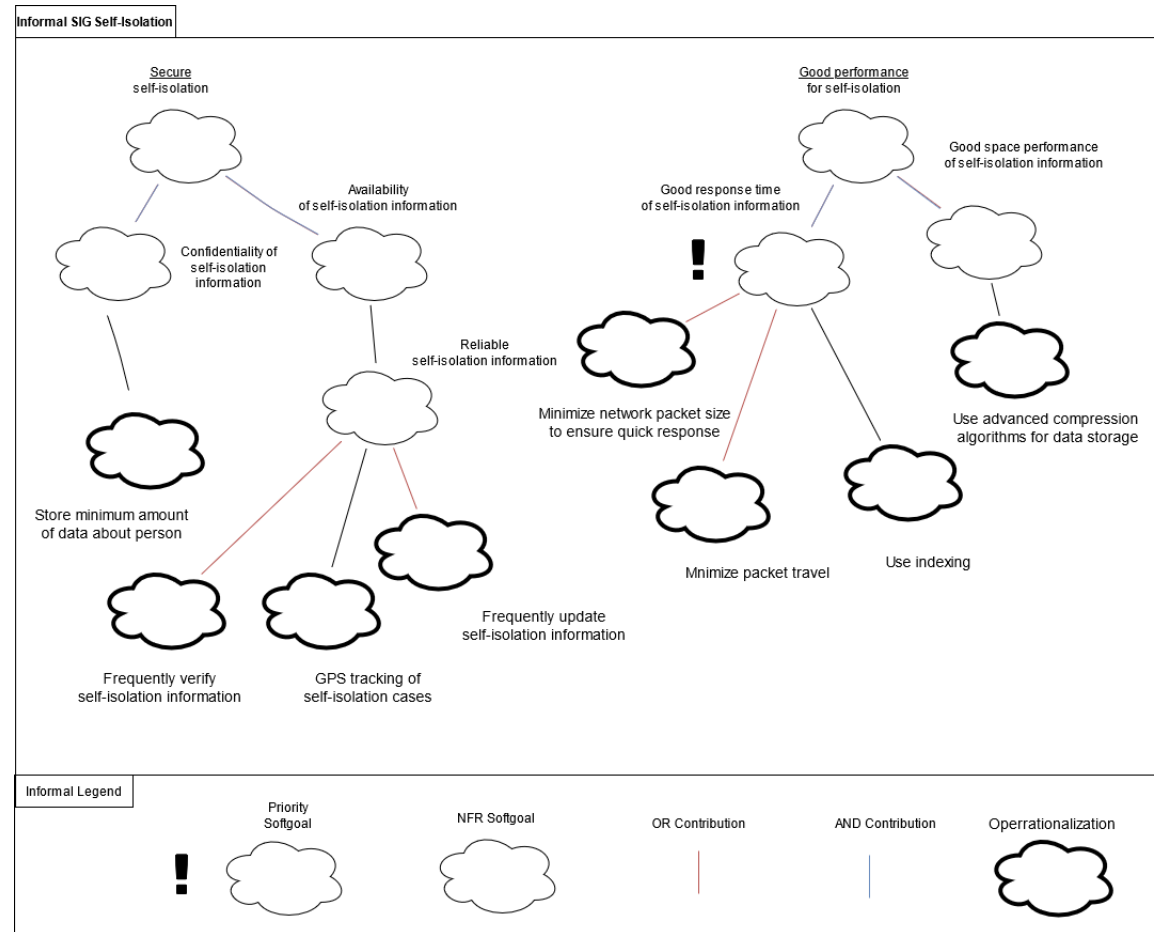




pic 7. Dangerous Countries - Decomposing NFRs

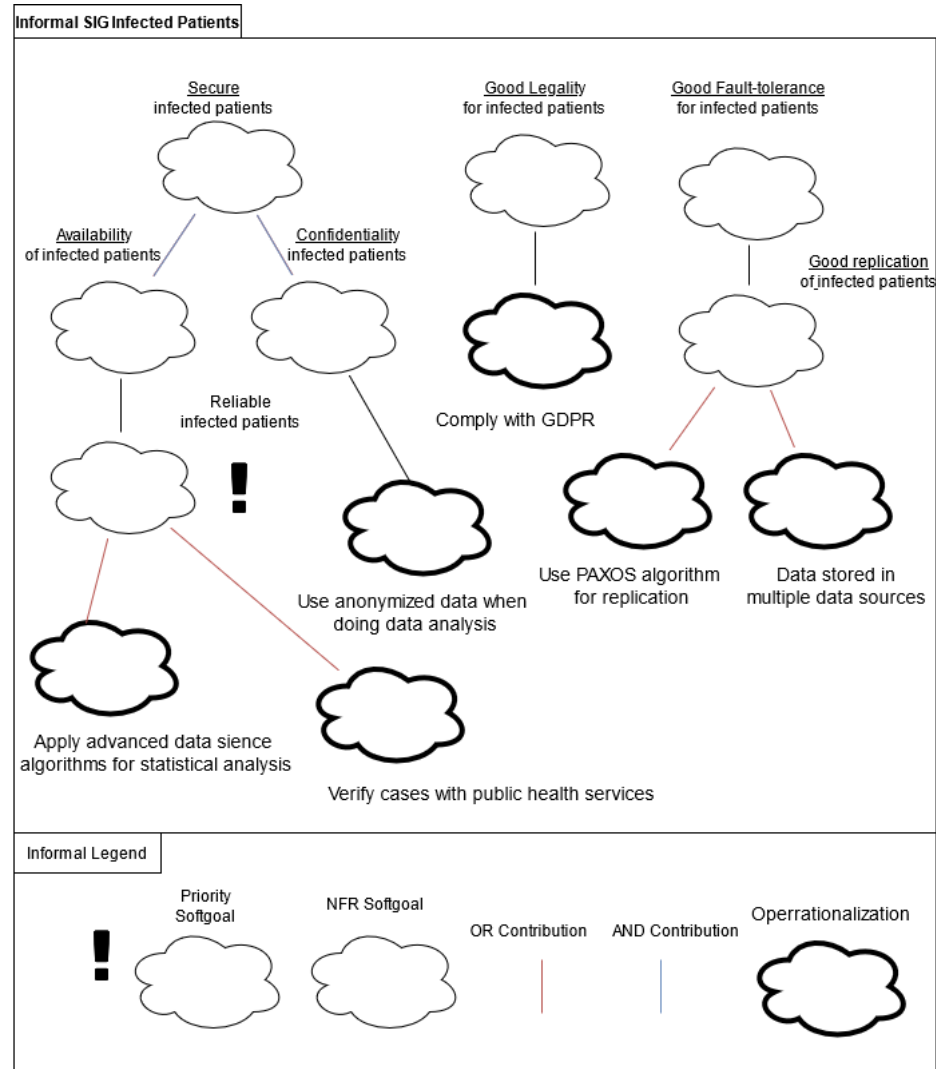
### 3. Identifying and modelling of possible operationalizations for NFR

#### 3.1. Self-isolation



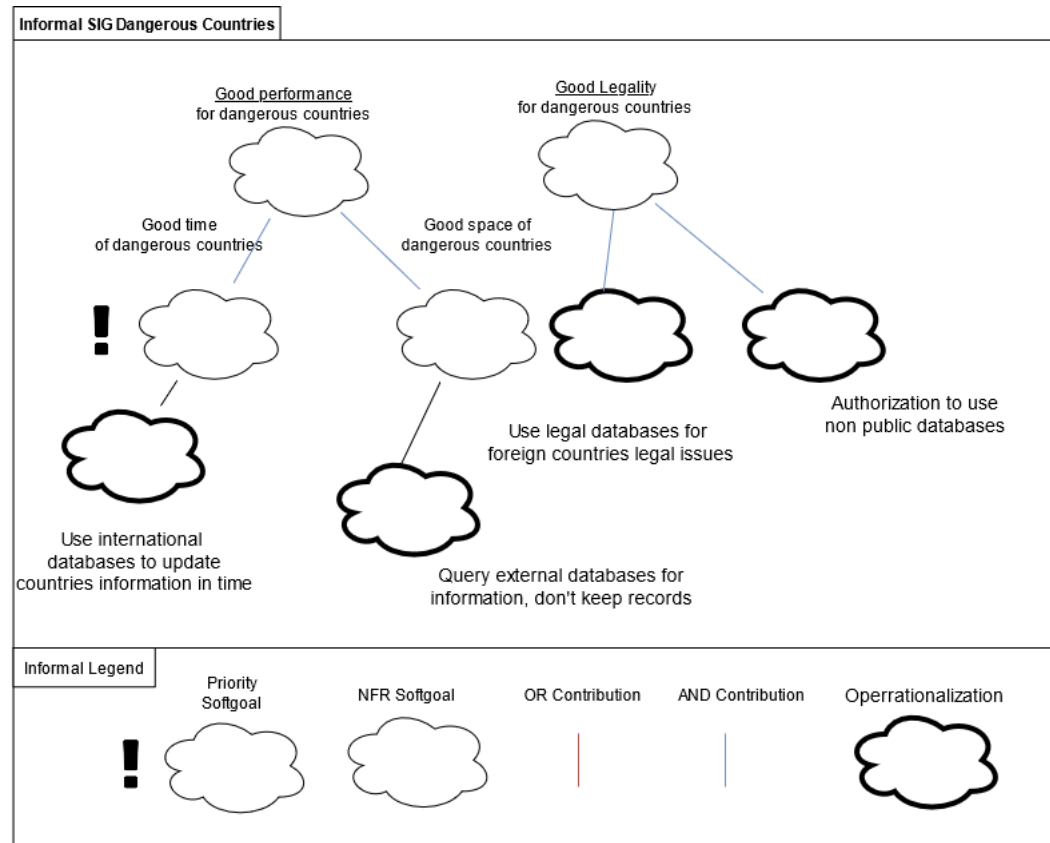
pic 8. Self Isolation - Possible Operationalizations

### 3.2. Infected patients



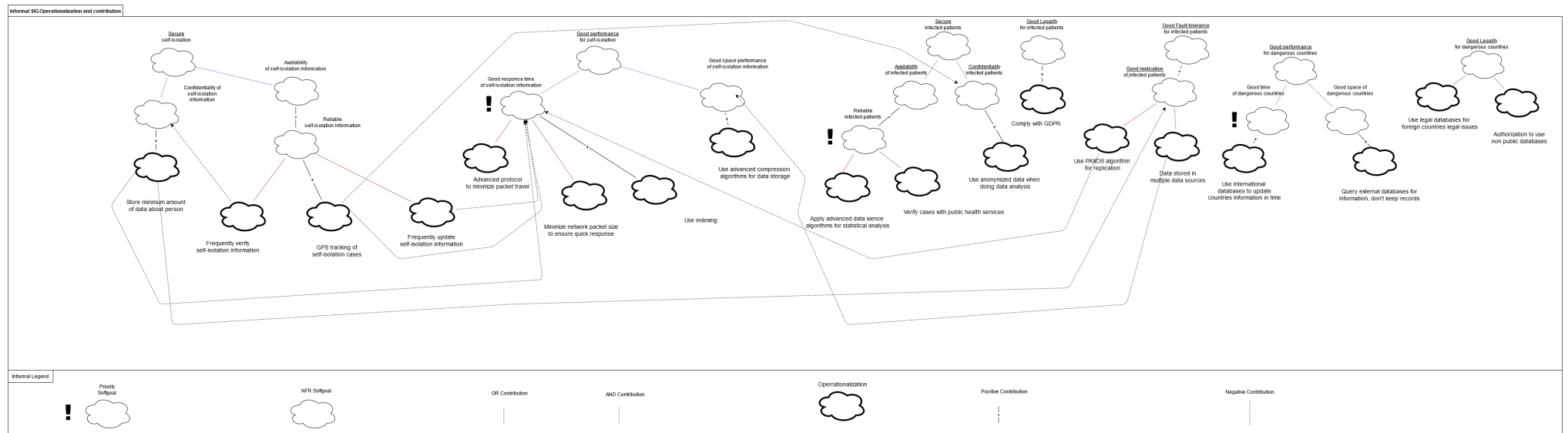
pic 9. Infected patients - Possible Operationalizations

### 3.3. Dangerous countries



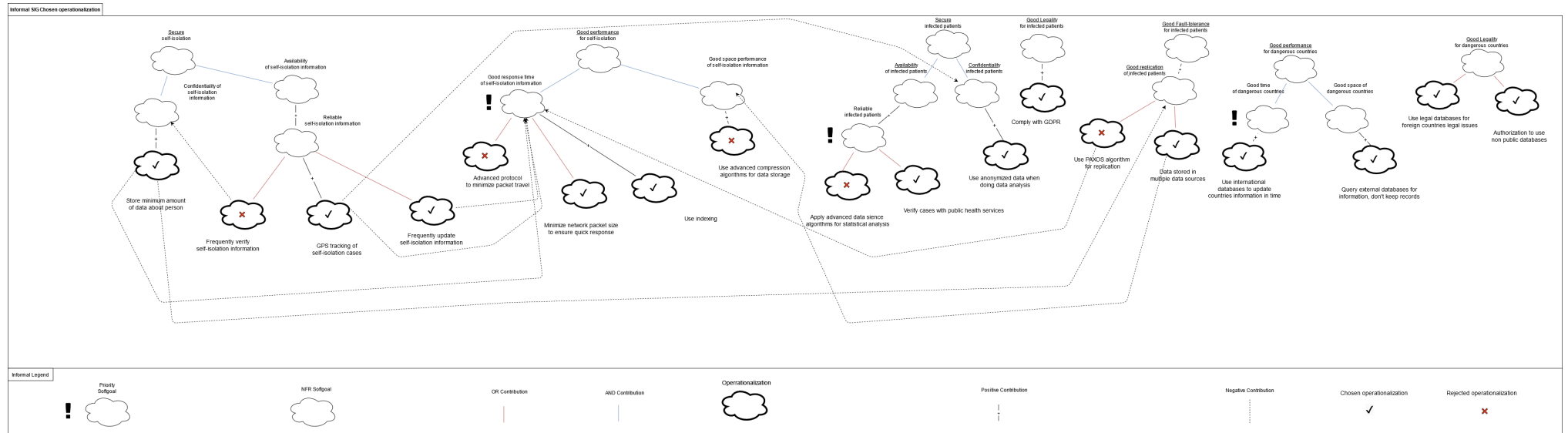
pic 10. Dangerous Countries - Possible Operationalizations

## 4. Detecting and modelling of implicit interdependencies among NFR



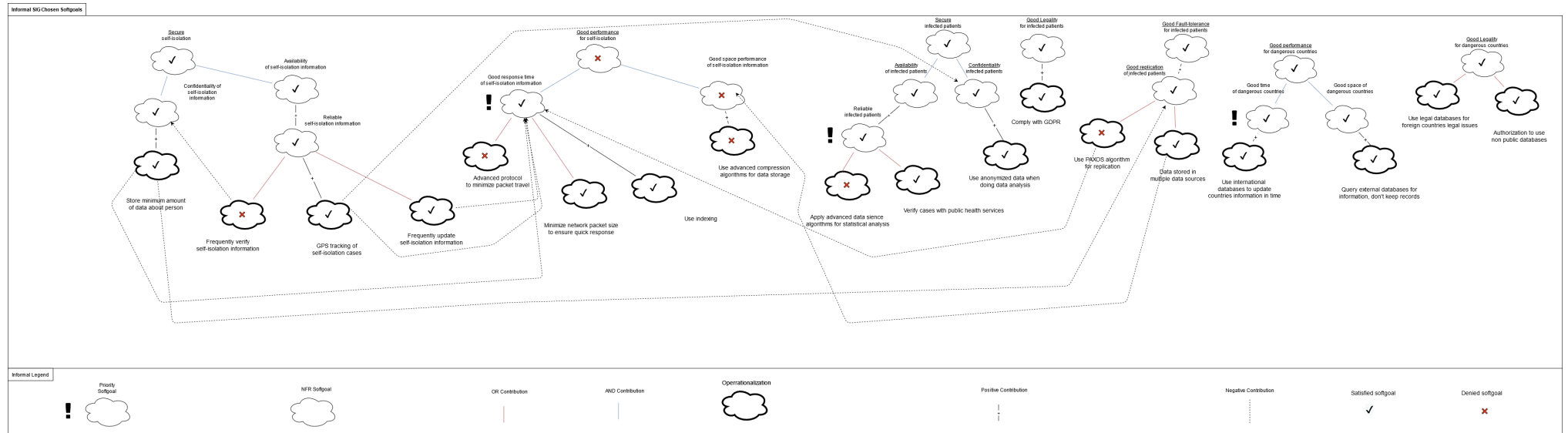
pic 11. Implicit interdependencies among NFRs

### 4.1. Chosen operationalizations



pic 12. Chosen Operationalizations among NFRs

## 4.2. Making decisions



pic 13. Satisfied and Denied Softgoals

### **4.3. Desition explanation**



## **5. Conclusions about an actor dependency**

## Conclusions