DECISION SUPPORT IN EMERGENCY CALL SERVICE:

ELLOC DECISION MAKING

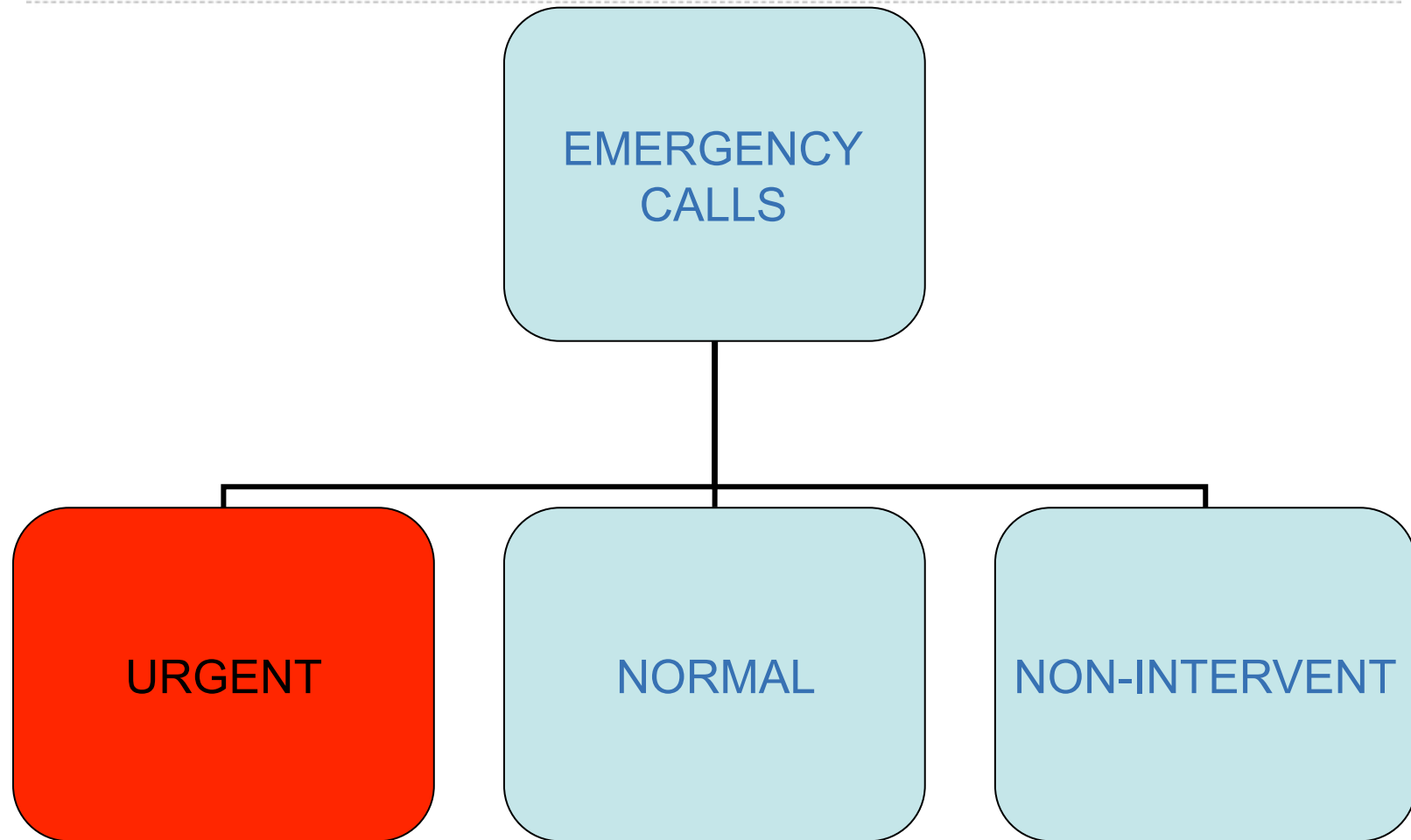Miha Ristič, Franc Novak

6. 10. 2014

www.mps.si

Introduction

- Introduction
- Defining attributes of the MAUT model
- Scenarios and model checking
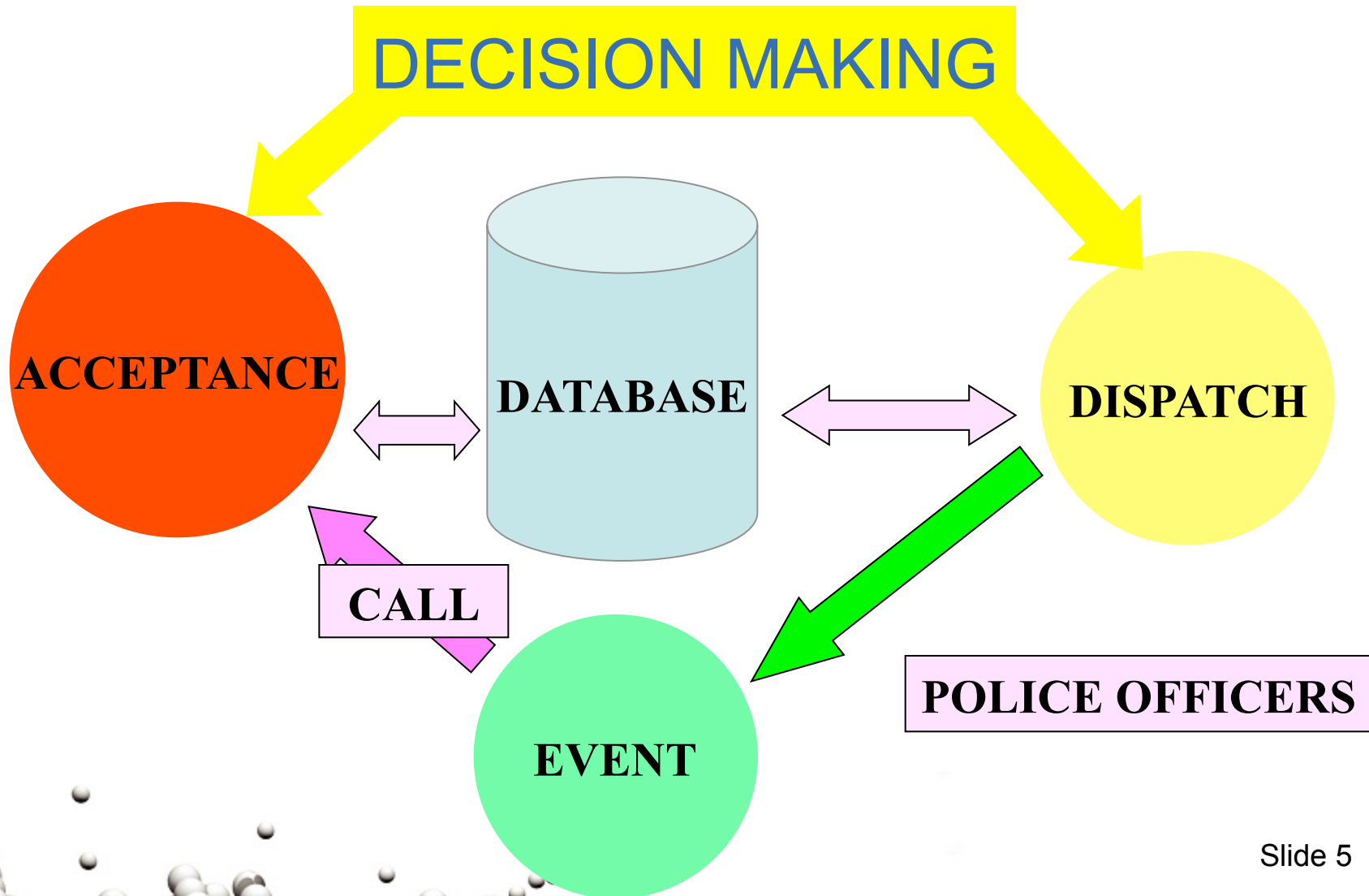- Conclusion

Introduction – 113 statistic

- 496.432 received calls in 2012

- 194.135 needed a police intervention

- 9.317 of these calls have been classified as urgent

Introduction – call handling

```
              ┌─────────────────┐
              │    EMERGENCY    │
              │      CALLS      │
              └─────────────────┘
        ┌──────────────┼──────────────┐
┌───────────┐   ┌───────────┐   ┌─────────────────┐
│  URGENT   │   │  NORMAL   │   │  NON-INTERVENT  │
└───────────┘   └───────────┘   └─────────────────┘
```

Introduction

DECISION MAKING

ACCEPTANCE

DATABASE

DISPATCH

CALL

EVENT

POLICE OFFICERS

Introduction

- Is this call for a police?

- How urgent is this event in comparison with others which are already in process or are on standby for dispatch?

- How many police officers are required for solving the event?

Introduction – Event log OCC

Introduction

Decision making includes:

- assessing the problem,
- collecting and verifying information,
- identifying alternatives,
- anticipating consequences of decisions,
- making the choice using sound and logical judgment based on available information,
- informing others of decision and rationale,
- evaluating decisions.

Defining attributes

1. Is there endangered life or property?
2. Is the influence on life or property of the event in question increasing?
3. Whose life is endangered? (police officer, medical rescue, fire fighter, child, VIP, weak person, etc.)
4. How many people are injured?
5. What kind of injures do they have?
6. Is there anybody injured?

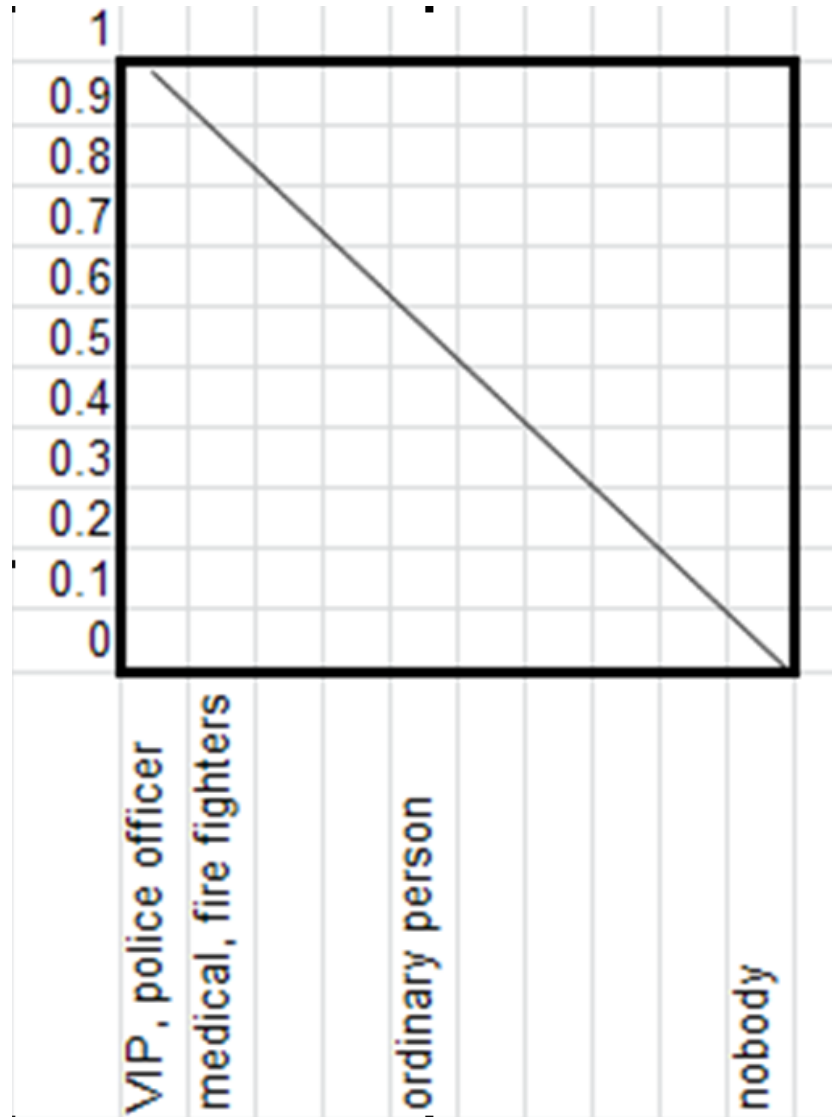# Defining attributes

8. How many persons are dead?

9. What kind of property is endangered? (national importance, cultural, protected property, etc.)

10. What kind of event has happened? (alarm, murder, other kind of crime, offence, etc.)

11. Will immediate arrival of police secure life of persons or property?

12. Is there some other service more competent to handle this event and is it available?
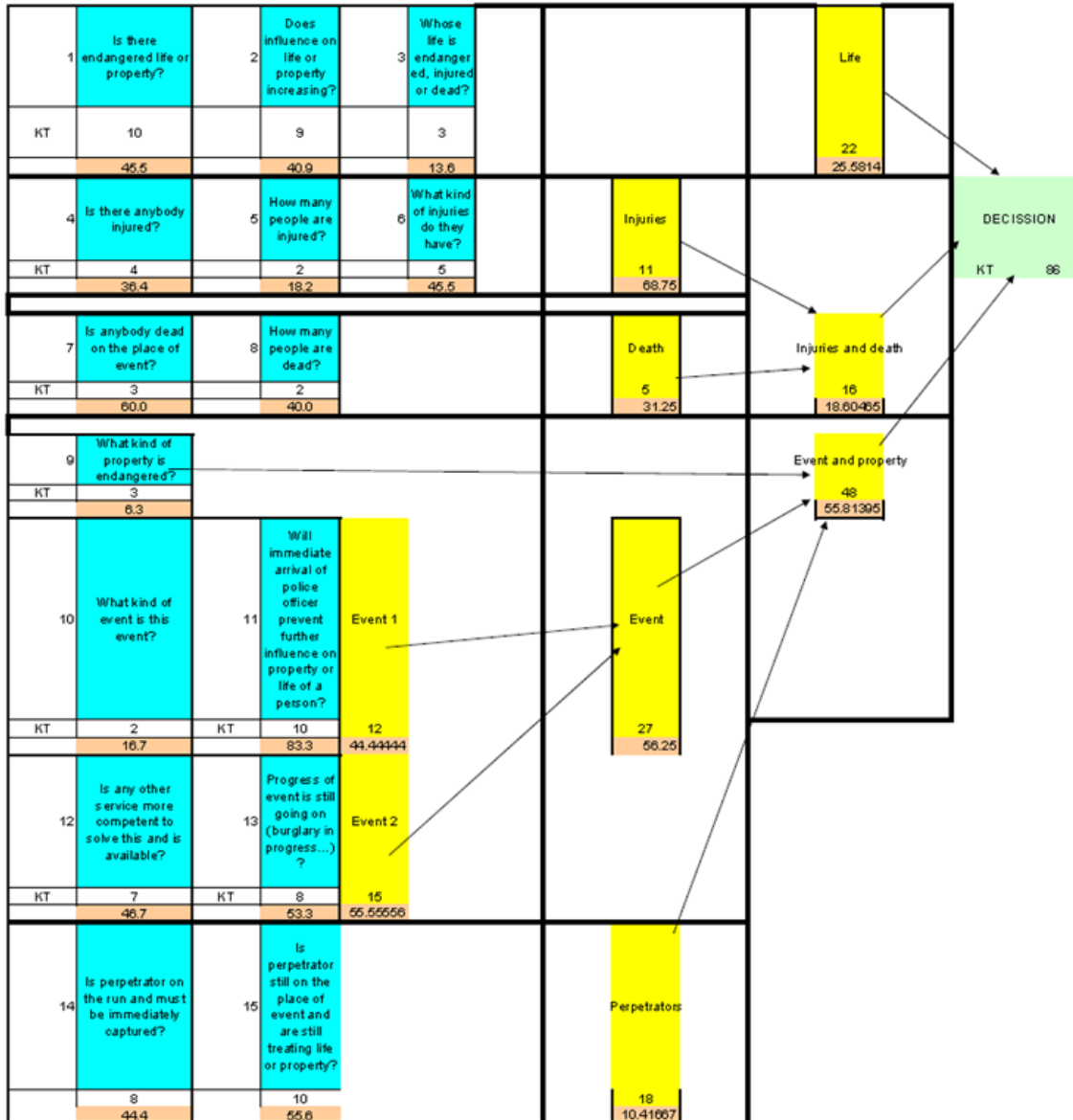
Defining attributes

13. Is the reported event still in progress?

14. Are the perpetrators on the run and must be immediately captured?

15. Are the perpetrators still at the place of the event and are still treating life or property?

Defining attributes

Defining attributes

Scenarios and model checking

- Murder…
- Shooting where police officer on duty is involved…
- Shooting where a non-police person is involved…
- Traffic accident on a freeway…
- Fight among six people...
- Verbal fight between two neighbors..
- Stolen license plate…
- Stolen a wallet…

Scenarios and model checking

- Murder…
- Shooting where police officer on duty is involved…
- Shooting where a non-police person is involved…
- Traffic accident on a freeway…
- Fight among six people...
- Verbal fight between two neighbors..
- Stolen license plate…
- Stolen a wallet…

Scenarios and model checking

- Murder…
- Shooting where police officer on duty is involved…
- Shooting where a non-police person is involved…
- Traffic accident on a freeway…
- Fight among six people...

Scenarios and model checking

Scenario	Grade	Result
1. Murder	0,420	5
2. Shooting on police	0,628	2
3. Shooting on person	0,610	3
4. Fight 6 people	0,597	4
5. Traffic accident	0,630	1
6. Verbal fight	0,181	6
7. Stolen license plate	0,097	7, 8
8. Stolen valet	0,097	7, 8

Conclusion

- the developed MAUT model assigns reasonable priorities

- might prove to be a useful support

- ELOOC implementation

Conclusion

- the developed MAUT model assigns reasonable priorities

- might prove to be a useful support

- ELOOC implementation

Conclusion

Questions?