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DELIVERABLE 4.6

PIM Toolkit 1: NPN Tool





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PIM Toolkit 1: NPN Tool

Deliverable Type

Report

Work Package

WP 6

Dissemination

Public

Month and Date of Delivery

Month 18, March 2020

Leader

NPN

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Programme

H2020

Contract Number

787100

Duration

36 Months

Start

1 October 2018

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REVISION HISTORY

VERSION	DATE	REVIEWER	MODIFICATIONS
1	26/01/2020	NPN	DRAFT
2	23/03/2020	USAL	REVISIONS
3	26/03/2020	NPN	MINOR REVISIONS

Table of Contents

1	Introduction.....	5
2	Current concept name	6
3	Concept background (the problem)	7
	3.1 <i>Implementation of predictive policing in NPN.....</i>	7
	3.2 <i>Issues relating to information quality / quantity.....</i>	8
	3.3 <i>Issues relating to taking action.....</i>	8
	3.4 <i>Issues related to 'culture' of prevention</i>	8
	3.5 <i>Need for multi-agency approach to crime prevention</i>	8
4	Concept description (the solution)	9
5	Focus of the toolkit concept	10
	5.1 <i>Principles.....</i>	10
6	Who is the toolkit for?	11
7	Components/elements that make up the toolkit.....	12
8	How is the toolkit used?.....	13
9	What change will the toolkit create?.....	15
10	What is needed to enable this concept to work?	16
11	Feedback from the Advisory Board	17
12	Next Steps.....	18
13	Appendix.....	19

1 Introduction

This document presents NPN's tool – predictive policing, and comprises of:

- The Toolkit Specification.
- The LEA Toolkit presentation – Advisory Board, January 2020.

2 Current concept name

Predictive Crime Prevention (PCP) – From data to action



A multi-agency approach to predictive policing that informs and targets stakeholder action to prevent high-impact petty crime.

3 Concept background (the problem)

3.1 Implementation of predictive policing in NPN

The predictive policing tool used by the Dutch Police (NPN) is called the 'Crime Anticipation System' (CAS). Current implementation of CAS is low.

A number of issues have been identified:

- Reactions to the predictive policing tool suggest it might be augmented with additional data
 - *“CAS-information combined with other intelligence (products) and a healthy dose of common sense can be used to be more effective.”*
- There is also a requirement to address 'soft issues' that impede the uptake of predictive policing tools: organisational culture ("the way we do things round here"), leadership and perceived knowledge (“as a police officer, I know best what is happening where and when”)

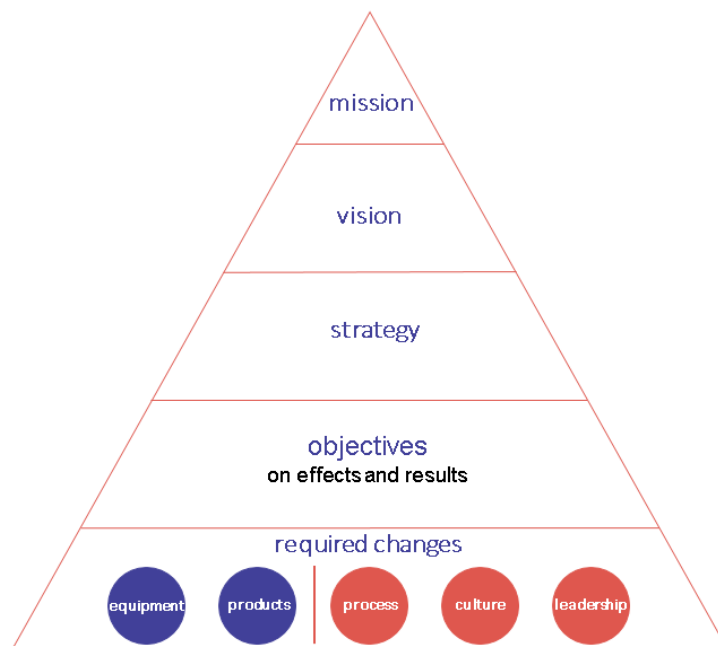


Figure 1. Business architecture model based on the model of Gerrit-Jan Obers
<https://www.obersconsulting.nl/en/business-architecture/13-what-is-business-architecture>

3.2 Issues relating to information quality / quantity

- CAS (the product) is functional but additional information would improve its practical utility
- Only police data is used in CAS. Other, potentially useful, information (for example, from other stakeholders and citizens) is not currently included
- CAS outputs / reports / maps show little variation in crime hot spots / hot times
- In suburban and rural areas, the reduced quantity of police data reduces the value of CAS outputs

3.3 Issues relating to taking action

- Many CAS-identified 'hot spots' are correlated with urban design factors — something over which police officers have no control
- Translating CAS outcomes into specific policing actions is resource intensive. This 'translation' work from CAS to operational policing involves a lot of (manual) work by the NPN Intelligence unit

3.4 Issues related to 'culture' of prevention

- Police culture tends to focus on catching offenders (especially repeat offenders) and responding to victims, rather than undertaking more strategic crime prevention actions
- *Preventing* crime is not perceived as rewarding police work, while *solving* crime is
- There is little knowledge amongst police officers of the impact of crime prevention on crime rates

3.5 Need for multi-agency approach to crime prevention

- Actions available to police that are effective in preventing high-impact petty crime are limited
- Often, other stakeholders (including citizens) may be in a better position or be better qualified to take action. For example, in the prevention of burglary, cooperation and coordinated action is required by housing associations, citizens and insurance companies
- Effective crime prevention requires information not just from the police — other stakeholders have information that can guide action, too
- A way of working is needed to support a multi-agency approach to predictive policing that informs and targets stakeholder action to prevent high-impact petty crime — Predictive Crime Prevention

4 Concept description (the solution)

The NPN Toolkit consists of a Predictive Crime Prevention Manual for a better, multi-agency way of working. This practical toolkit will enable NPN and their stakeholders to adapt predictive policing tools and methods to support the prevention and mitigation of high-impact crime.

Working in collaboration with other stakeholders such as local government, security policymakers, and citizens, the Toolkit will focus on tackling domestic burglary, pickpocketing, car burglary, car theft, burglary of offices, and bicycle theft.

Predictive Crime Prevention maps and information in the CAS system are required to support a multi-agency approach with stakeholders. To enable NPN and their stakeholders to use CAS to support the prevention and mitigation of high impact petty crime, the Toolkit will:

- Use data and information provided by other stakeholders (almost always respecting GDPR and WPG — the Dutch police law for handling personal data)
- Support cooperative working between intelligence units and operational teams from all stakeholders
- Enable participant stakeholders to take targeted crime prevention action
- Integrate advice on most promising intervention activities
- Provide information to users in a form that enables them to take action

It is envisaged that the Toolkit will be demonstrated in two urban locations:

- Hoorn
- Gouda

NOTE: NPN will strive for collective ownership of the developed Toolkit and/or an open source system. This will be impossible for raw data, but it must be possible to share information, knowledge and intelligence, though GDPR & WPG (Dutch police law for handling personal data) might present challenges.

5 Focus of the toolkit concept

5.1 Principles

- That a problem-oriented approach should be adopted
- That crime incident types on which to take action should be carefully targeted.
 - For example, this might include crimes for which there is substantial data for analysis, such as burglary (residential and business); pickpocketing; car crime and/or bicycle theft
- That a multi-agency approach should be adopted
 - Developing a shared strategy between stakeholder agencies / organisations
- That the Intelligence model of the Dutch Police can form the information architecture for the working processes of the multi-agency team, supporting decision-making, targeting and action
 - Moving from data to action — action-oriented information leads to action-based knowledge, insight and wisdom.

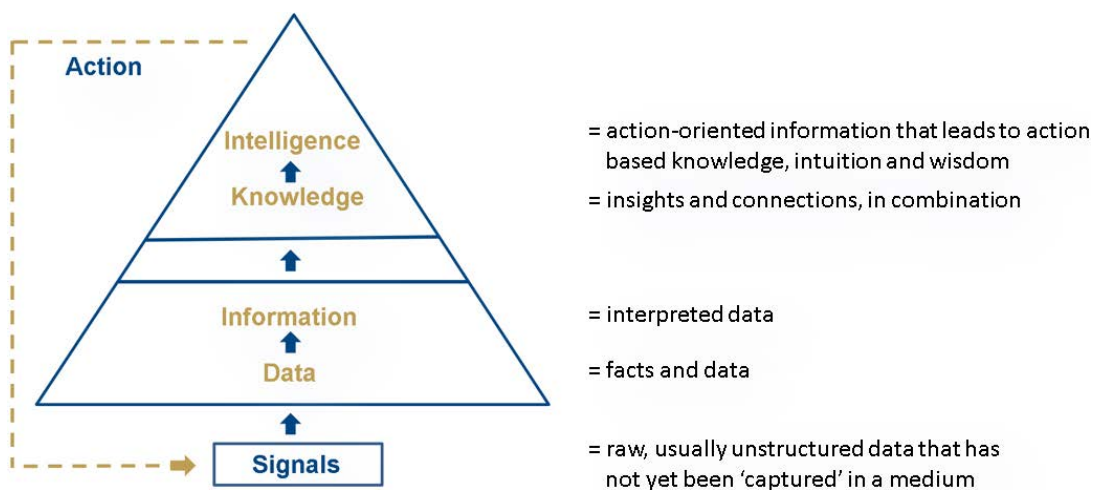


Figure 2. NPN Intelligence Model

(SOURCE: Kop, N. & Klerks, P. (2009). Intelligence gestuurd politiewerk. ISBN 978-90-79149-14-8, pp. 8–9)

6 Who is the toolkit for?

The toolkit will be used by:

- NPN police officers (e.g. 1 team lead + 1 senior intelligence officer + 1 community officer)
- Local government (e.g. persons responsible for public space and/or multi-agency approach) by senior Community Service Officers (CSOs — or BOAs in Dutch)

NOTE: The Community Service Officer (CSO) provides support in crime prevention, investigation, and response where full police powers are not necessary. They assist police officers in law enforcement. In the Dutch police, CSOs are referred to as Buitengewoon Opsporingsambtenaar (BOA) or "light blue police" due to the uniform they wear.

Other stakeholders will be involved in providing data into the Toolkit and receiving advice, including:

- Citizens — Taking preventative measures locally and reporting 'irregularities'
- Relevant local organisations

The Toolkit will be 'owned' by the different stakeholder agencies at different levels (e.g. front-line operational staff; intelligence staff; IT staff; etc). The roles and engagement of these groups will be specified during the Toolkit prototyping and development stage.

The way in which users engage with, contribute to and use the Toolkit will be co-designed with users to maximise the utility of the final Toolkit design and reduce so-called "acceptance" issues. Such users may include, for example:

- Operations staff — e.g. BOAs, police officers, insurance advisors
- Intelligence staff — e.g. data analysts, information specialists
- IT staff — Data managers, software / application developers

In developing and prototyping the Toolkit, NPN will focus on police and stakeholder user collaborations in two different city areas:

- Hoorn
- Gouda

7 Components/elements that make up the toolkit

The Toolkit will contain the following key components:

- Manual to explain the process of Predictive Crime Prevention (PCP)
 - This will provide detailed information on how the Toolkit elements (maps; CAS system; etc.) are used
 - Details of specific requirements for successful implementation — e.g. regarding information / data sharing
- Redesigned format for communicating predictions from the CAS system
- Process map / flowchart that visually describes the stages in Toolkit use
- Meeting protocols
 - These will support points in the process when different stakeholder representatives meet together
- Flyer / Brochure summarising the PCP way of working, to support wider take-up of the toolkit
- Video / animation to promote the benefits of the Toolkit's approach to crime prevention
 - What is Predictive Crime Prevention; Why more stakeholders should be involved; How stakeholders can participate; etc.

8 How is the toolkit used?

Actions taken by the multi-agency partnership (police, local government, other agencies / stakeholders) are guided by the process map / flowchart and content of the manual.

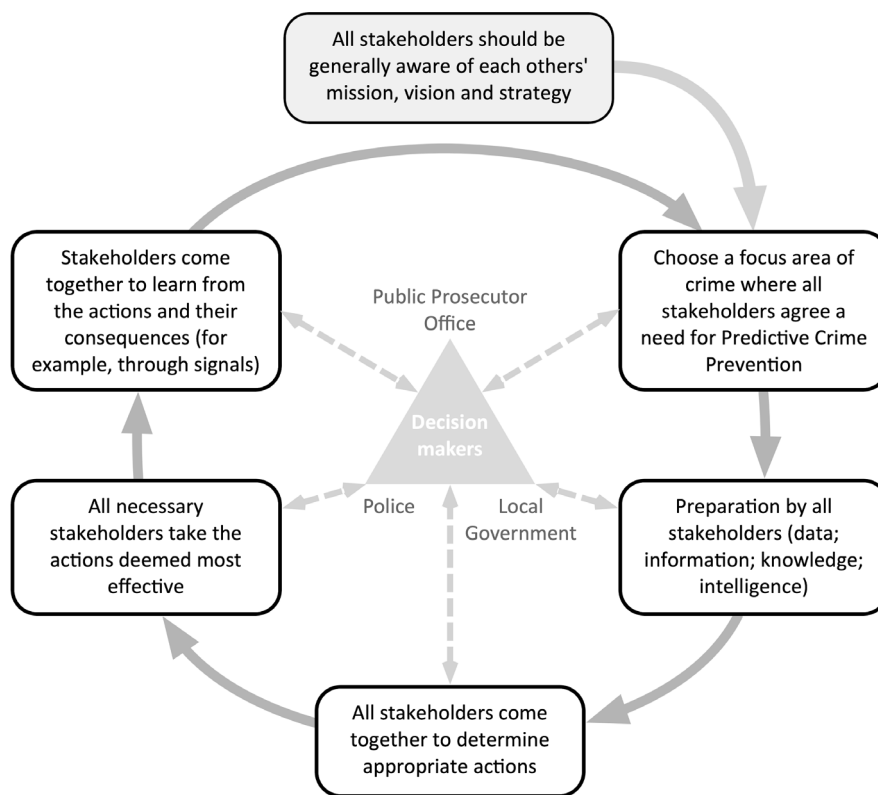


Figure 3. Example high-level PCP process map / flow chart

- The multi-agency team discusses and agrees on an area of focus for PCP, using data and insight communicated through IT support systems (maps; analyses; etc.)
- Relevant information to the area of focus is shared by and with all stakeholders
- The multi-agency team meets to discuss PCP analysis outcomes and determine appropriate actions
- Identified actions are undertaken / delivered by the relevant stakeholder agencies

- The multi-agency team meets regularly to discuss the effects of actions and use the Dutch Police Intelligence-model (including an evaluation process) to learn from actions taken and feedback / signals received. PCP interventions are adapted based on results
- The process is repeated a number of times to embed a new way of multi-agency working and allow continuous adaptation to what does and does not work.

9 What change will the toolkit create?

- Greater support for crime prevention from key stakeholders such as the police and municipalities (mayor and others)
- Improved knowledge of what data / information can and cannot be shared/combined (GDPR and WPG)

NOTE: Stakeholders working together will NOT be sharing raw data, rather sharing information/knowledge and coming to intelligent crime prevention actions together in compliance with EU privacy laws (General Data Protection Regulation (GDPR) and WPG — Dutch police law for handling personal data)

- Actions arising from Predictive Crime Prevention will not be based on information/intelligence of the owner, but on a decision about which stakeholder is the best equipped and most effective to execute crime preventive actions/measures based on information sources
- A more practical and feasible model for the ‘multi-agency approach’ or ‘stakeholder approach’ in modern (GDPR) times to improve the relationship between police and citizens in neighbourhoods (including e.g. ethnic minorities in multicultural neighbourhoods’)
- Knowledge about existing instruments that are easily available, effective and evidence-based (mainly available from CCTV) will guide their use

10 What is needed to enable this concept to work?

- All stakeholders' commitment and agreement
- Careful implementation taking into account 'soft' social/cultural issues relating to any required changes (i.e. process, culture, and leadership)
- Change in working practice for all involved stakeholder / agencies using the Dutch Police Intelligence model as a framework
- Accommodation of all GDPR and WPG requirements when sharing data/intelligence. This will also need to be considered when selecting a type of crime / area to target.

11 Feedback from the Advisory Board

- The Advisory Board liked the change from predictive policing to preventative crime prevention. This is already being discussed in other quarters.
- The Advisory Board recognised that the police have only a minor role in preventing crime and endorsed the involvement of other agencies / stakeholders in crime prevention actions
- The Advisory Board suggested, “It is not a matter that we lack data, but more a matter of how we can combine it in a more understandable and practical way— and then what interventions can be applied.” It was suggested that NPN seek further insight from evaluations that have taken place
- It was suggested that it was important that information from victimisation surveys is also combined with police data to get a richer picture. The Netherlands has one of the largest victimisation surveys in the world with some 150,000 respondents
- From an ethical perspective, it was suggested that the biggest question was: what does it mean ‘it works’? What is the problem that NPN are actually trying to solve? There are a number of venues, cultural differences, but why do we need this Toolkit?
- The second ethical point related to the aggregation of datasets. NPN needs to provide sound oversight and a clear goal for why they are combining multiple datasets. While in the Netherlands it is relatively easy to do this from a practical perspective, from a legal and ethical point of view it’s much more complex to handle if the structure manipulating such data is complex and difficult to understand

12 Next Steps

- Work with DSP to identify process for developing and prototyping the NPN Toolkit
- Discuss with stakeholders in Hoorn and Gouda their participation in Toolkit prototyping

13 Appendix



NPN – Predictive Policing

Presenters

Marian Krom - NPN

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NPN – Predictive Policing

Predictive Crime Prevention

Presenters

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Armando Jongejan - NPN

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Predictive Crime Prevention

Not technical. It is a manual

Presenters

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Initial Toolkit



PREDICTIVE CRIME PREVENTION

FROM DATA
TO ACTION



01 Problems to solve

02 The Design Solution

03 How it works

04 Next steps



**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION

01 Problems to solve

“Application of predictive and analytical techniques across large datasets to enable early identification of potential crime problems”

Predictive Policing?

Acceptance is low

- More useful in the city, but less in a rural and suburban areas: not enough police data
- Only police data are used and other potentially **useful information** of stakeholders is **lacking**
- **Culture** “as a police officer I know best what is happening where and when”

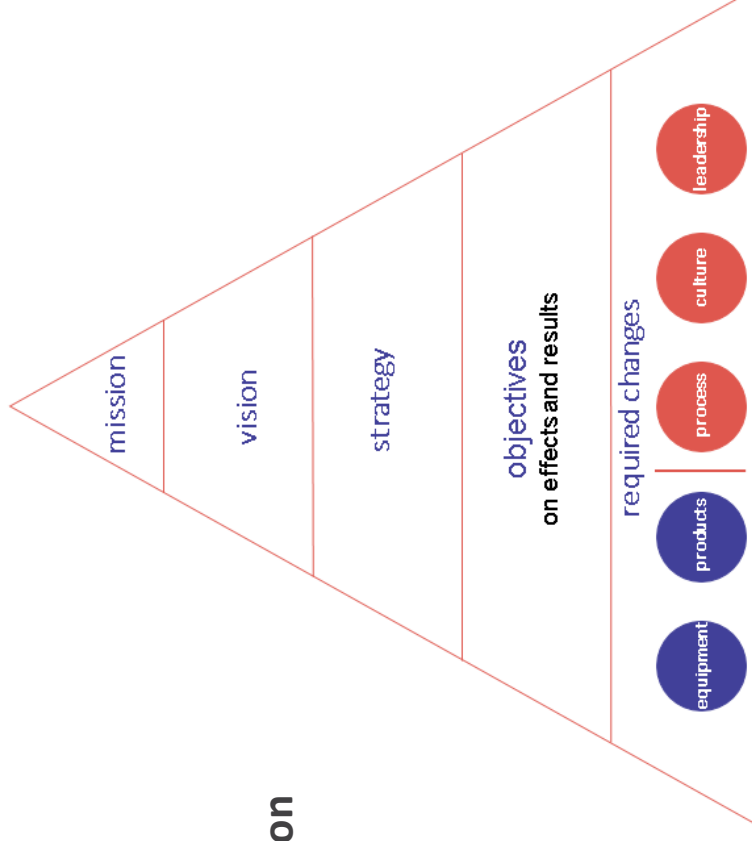


01 Problems to solve

Police **culture** with respect to (Predictive) Crime Prevention

Acceptance is low

- Core business, and thus priority, for police leans towards law enforcement and investigation
- There is not enough knowledge on the effect of crime prevention on crime rates



**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION

01 Problems to solve

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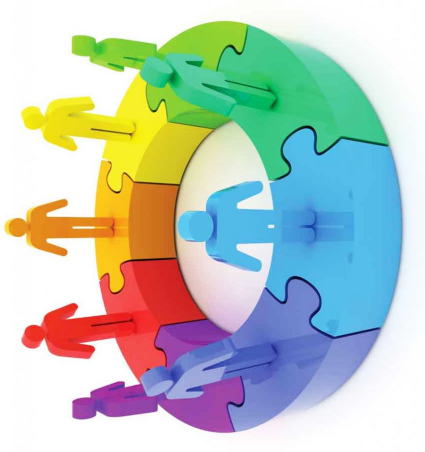
*“...Really looking at which stakeholder can best intervene.
Who has the best perspective for action...”*

(Public Prosecution, interview 4th July 2019)

Limited options for actions of the police

Police is just one of the stakeholders

- Not all effective actions are actions police can take
- Other stakeholders (including citizens) are better equipped
- We need a more effective **coalition** with stakeholders!



**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION

02 The Design Solution

Toolkit: a manual with requirements

Components / Features

- o A practical multimedia toolkit in text, images, requirements, and working processes
- o A broader information overview for the participating stakeholders
- o Use data from other stakeholders and the police (**note privacy**: General Data Protection Regulation and WPG!)
- o Enable all participant stakeholders (including citizens) to take action: f.e. the Community Service Officers (Dutch BOA's)



**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION

02 The Design Solution

Toolkit: a manual with requirements

Stakeholders

- o Local government / municipality (Community Service Officers)
- o Citizens
- o Police
- o Housing association
- o Insurance companies, ...

Start with just **one** stakeholder



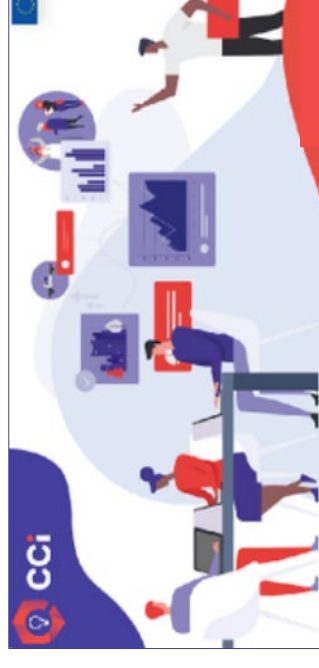
**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION

02 The Design Solution

Toolkit: a manual with requirements

Prototyping

- o Manual *for way of working* (text + images + animation)
- o Flyer / summary
- o In depth document
 - o Process map / flowchart
 - o Meeting protocols
- o List of requirements
 - o Process, Culture, and Leadership
 - o Focus groups
 - o Storytelling
 - o Equipment and products



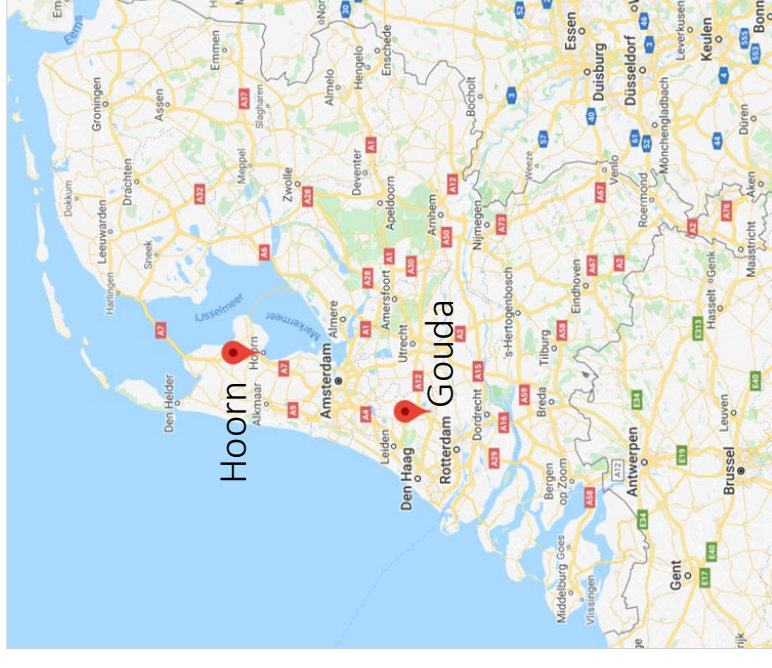
**PREDICTIVE
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FROM DATA
TO ACTION

02 The Design Solution

Toolkit: a manual with requirements

Testing prototype

- Gouda
 - Police
 - Community officer
 - Analyst
 - Unit head
 - Citizens
 - Neighbourhood prevention team
 - CCI minorities-police relations research plan (tomorrow)
- Hoorn
 - Police
 - Information officer
 - Community officer
 - Unit head
 - Local Government
 - CSO (BOA)

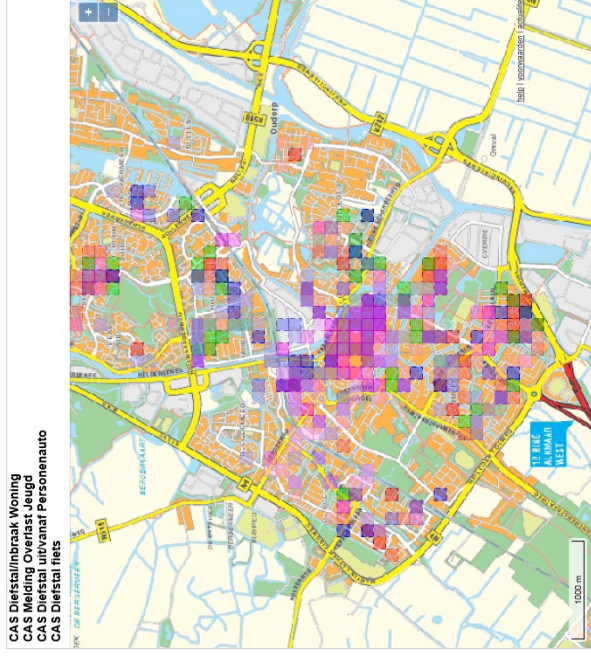


02 The Design Solution

Toolkit: a manual with requirements

Benefits

- More effective approach
- Involved stakeholders (including citizens)
(support the toolkit and support the approach)
- Practical approach to reduce crime
- Improve relationship between stakeholders (including citizens) and police



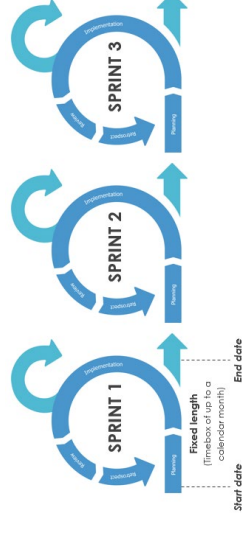
**PREDICTIVE
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FROM DATA
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03 How it works

Stakeholders work together

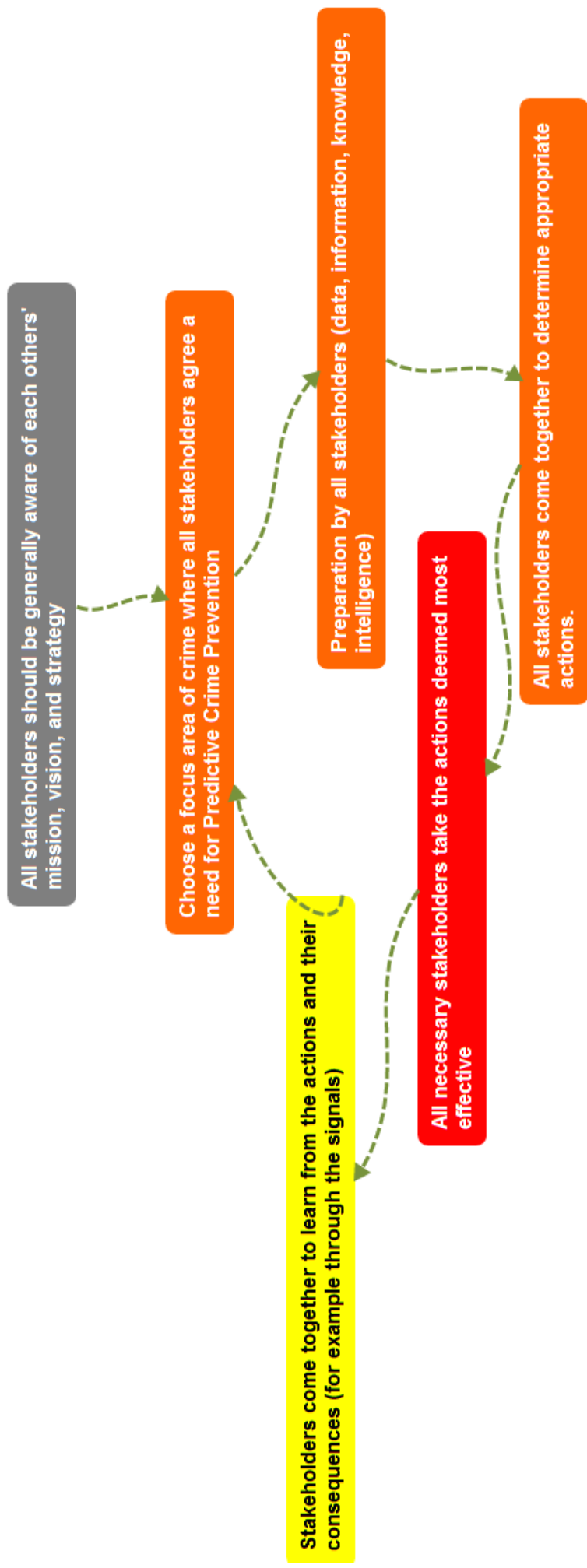
Agile

- Teams of stakeholders work in sprints of 4-6 weeks
- Learn from actions taken and signals received in an agile way
- The process is repeated a number of times to learn the new way of working
- Quality assurance of the implementation of the toolkit



**PREDICTIVE
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03 How it works: Predictive Crime Prevention

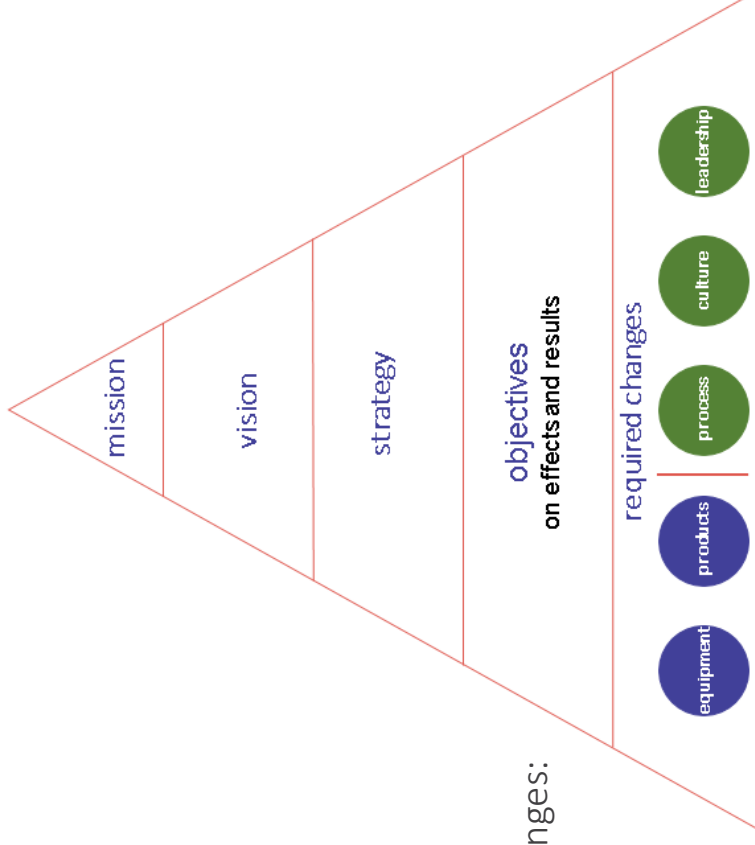


04 Next steps

Needs

Develop

- o Stakeholders commitment
- o Buy-in expertise and resources
- o Choose a selection of High Impact Petty Crime: focus!
- o Careful implementation and awareness of “soft” required changes:
Process, Culture, and Leadership
- o Taking into account privacy (GDPR and WPG)



**PREDICTIVE
CRIME PREVENTION**
FROM DATA
TO ACTION



PREDICTIVE CRIME PREVENTION

FROM DATA
TO ACTION

Thank you!

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This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 787100