



a big-data analyTics from base-stations Registrations And Cdrs e-evidence sYstem

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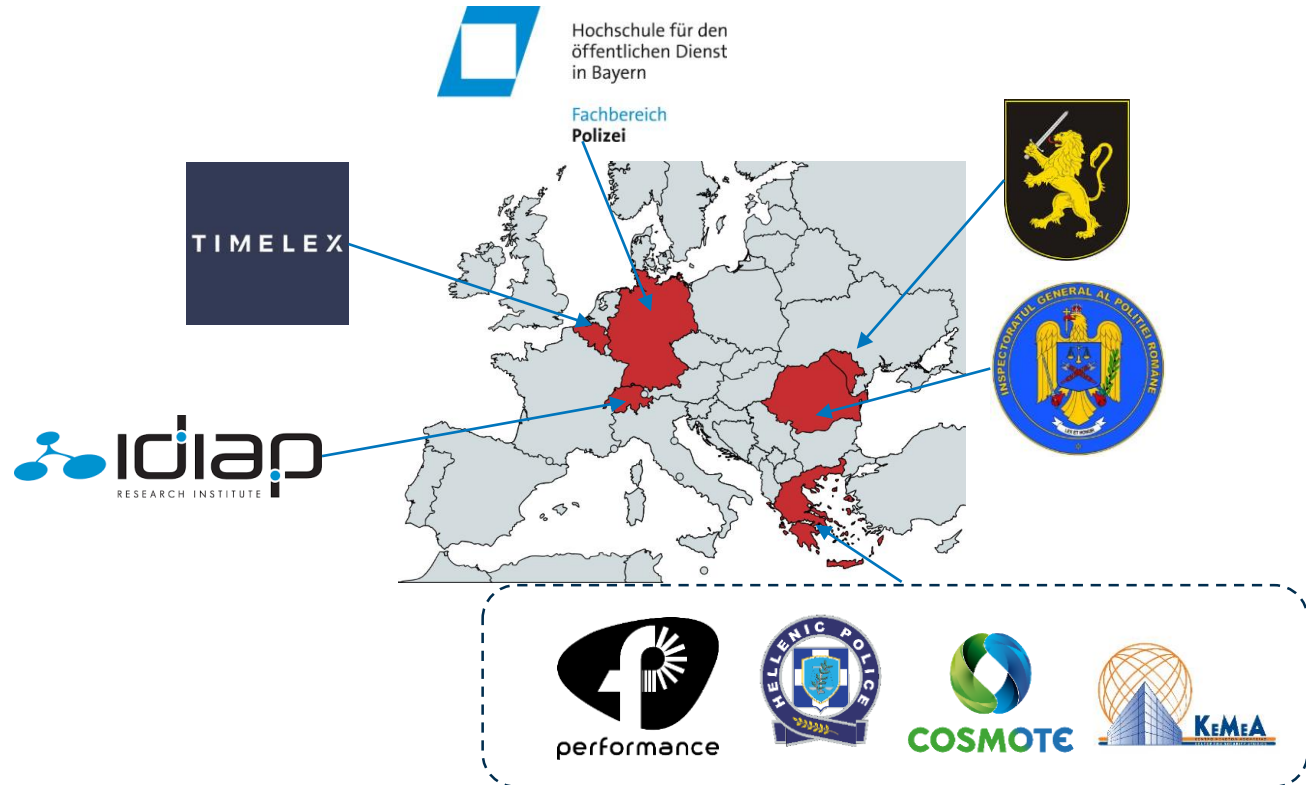


TRACY Identity

9 partners from 6 countries

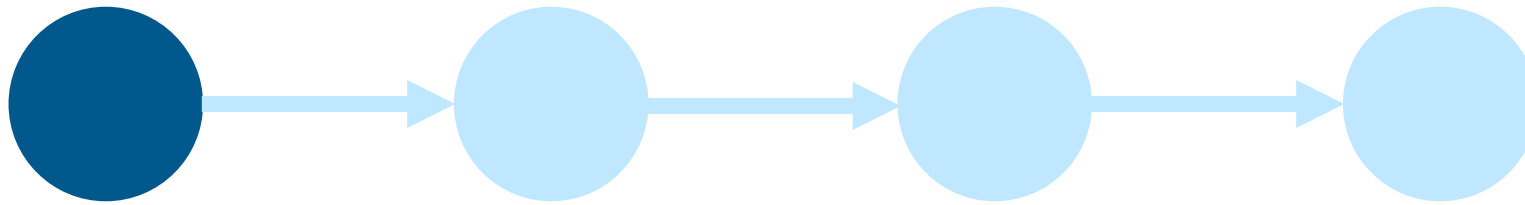
3 Law Enforcement Agencies (LEAs):

Hellenic Police (HPOL, Greece),
Inspectoratul de Politie Judetean
Galati (GCPI, Romania), Inspectoratul
General al Politei (GPI, Moldavia)





Journey Timeline

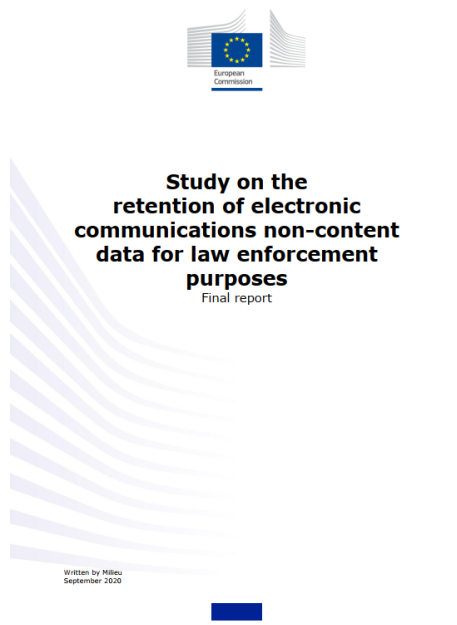


**Step #1: Law
Enforcement
Agencies
Needs Analysis**





Needs Analysis



Covers 10 EU countries

Importance of NCD to Police Authorities investigations

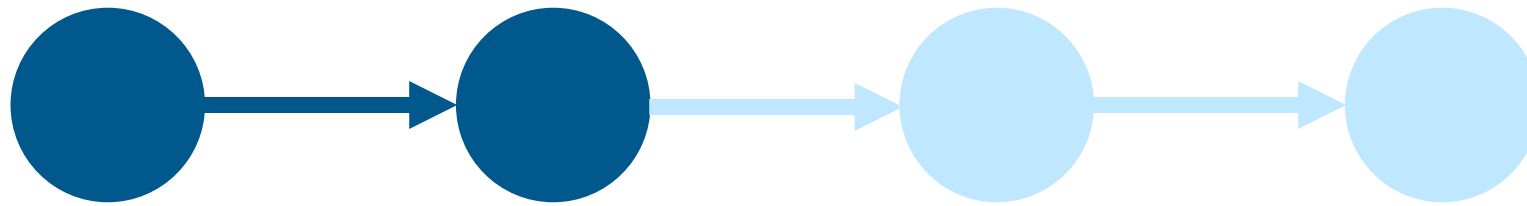
Barriers: Delays in getting data from ESP(s), Inconsistency in the data provided by the ESP(s), Legal framework...

The need for Law enforcement and Justice practitioners to adapt to new technologies as reported in EU Security Union Strategy.





Journey Timeline



**Step #2:
Solution
Design**





Technological Concept

- Promote an innovative digital forensic and investigation platform to assist LEAs identifying suspects of serious organized crimes and terrorism.
- ML algorithms applied on Electronic communication Service Providers (ESPs) Non-Content Data (NCD).
- Combine experience with past project -> ROXANNE





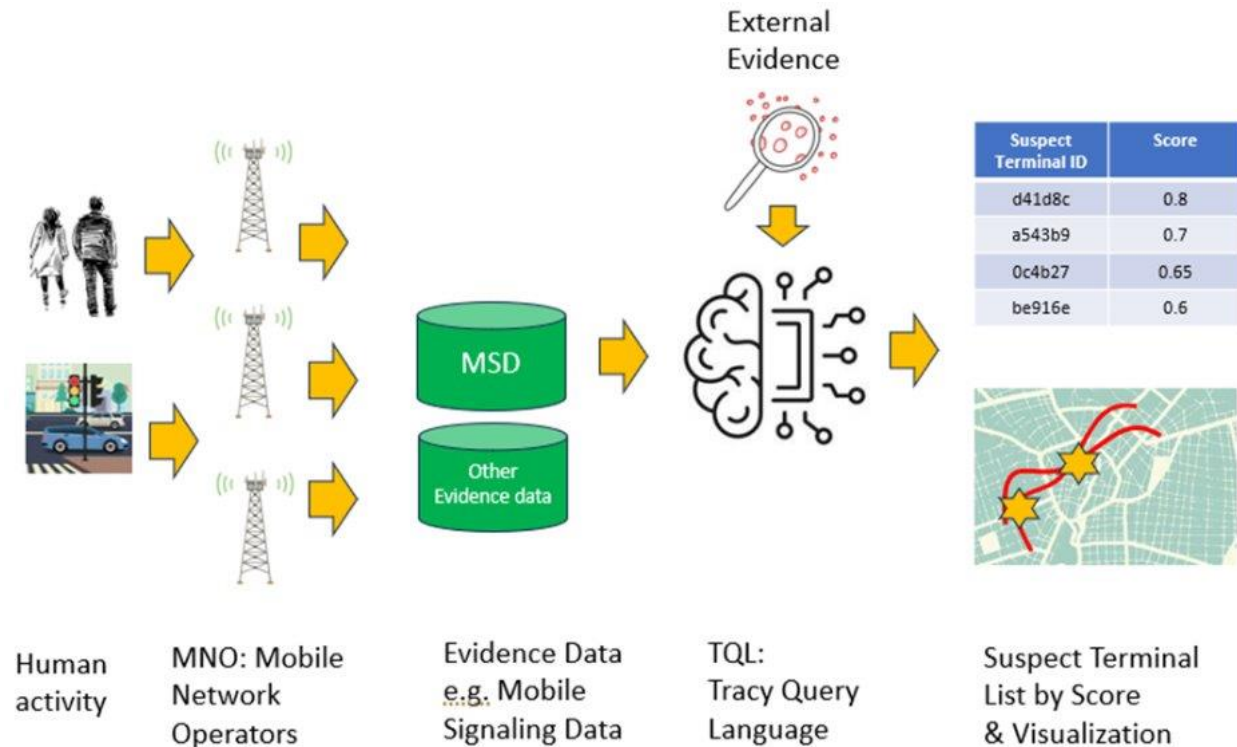
Technological Concept

Enhance identifying networks of organised crime and terrorism, based on telecom metadata.

Suspect identification following the digital traces that mobile phones leave as they operate.

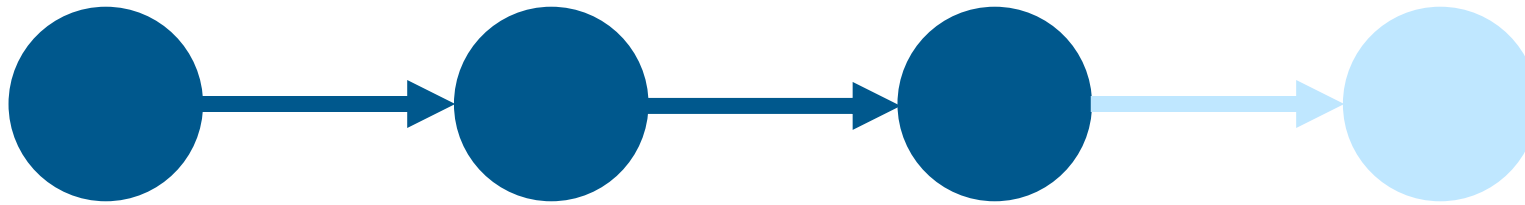
Distinguish and prioritize suspicious terminals (top-n possible suspects) based on additional provided evidence.

Interactive dashboards are provided to assist the user with interpreting the data.





Journey Timeline



**Step #3: Use
Case Pipeline**



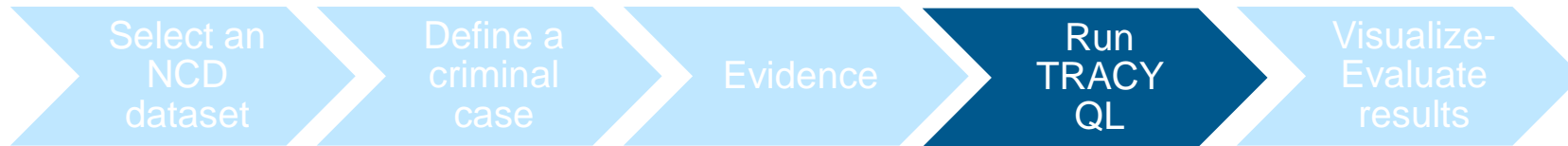


Use Case Pipeline





Use Case Pipeline



```
tr.mapMatching()
✓ 0.0s
Map Matching completed successfully

tr.printDataAfterMapMatching()
✓ 0.0s
```

	person_id	lat	lon	measured_at	cell_lat	cell_lon	cellid
0	100007	37.976709	23.726145	2023-07-28 08:30:28	37.976982	23.725847	2.021304e+15
1	100007	37.976762	23.725691	2023-07-28 08:30:22	37.976982	23.725847	2.021304e+15
2	100007	37.976821	23.725241	2023-07-28 08:30:16	37.977130	23.725522	2.021265e+11
3	100007	37.977292	23.726288	2023-07-28 08:30:39	37.977435	23.725830	2.021265e+10
4	100007	37.977501	23.726341	2023-07-28 08:30:51	37.977435	23.725830	2.021265e+10
...
4669	502180	38.060455	23.753287	2023-07-28 09:12:05	38.058853	23.752940	2.021401e+13
4670	502180	38.060641	23.749458	2023-07-28 09:11:31	38.062522	23.750030	2.021301e+15
4671	502180	38.060863	23.750044	2023-07-28 09:11:37	38.062522	23.750030	2.021301e+15

- ✓ Incorporate evidence
- ✓ Produce a list of suspect
- ✓ Produce a score for each terminal
- ✓ See top N suspects

```
# Search for the suspects
suspects = tr.find(ev1, ev2, ev3, ev4)

# Show the top n suspects
suspects.top(8)
✓ 0.0s
```

```
[(502180, 1.0),
(5000000, 1.0),
(5000001, 1.0),
(197, 0.75),
(35386, 0.75),
(35604, 0.75),
(73967, 0.75),
(103092, 0.75)]
```

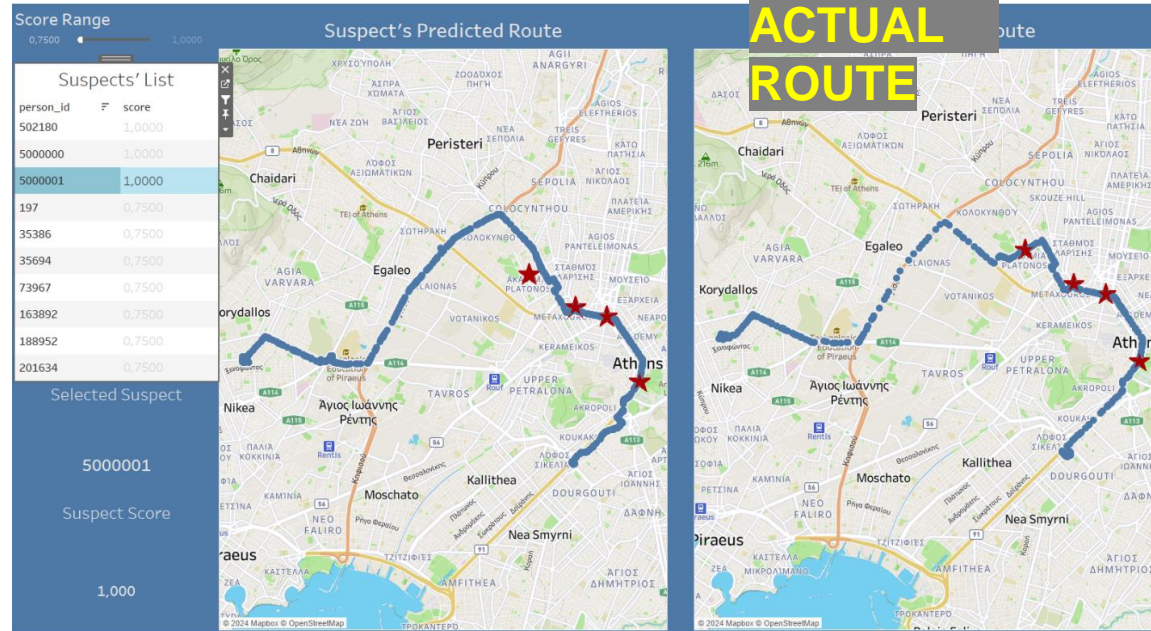




Use Case Pipeline

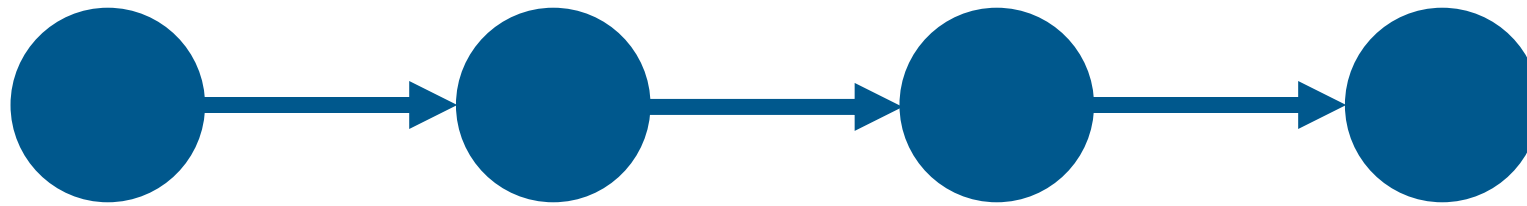


Suspect
73967
Trajectory





Journey Timeline



**Step #4: Project
Achievements**





Project Achievements

1. TRACY solution installed in HPOL for operational use in real life cases.
2. Promote the Intelligence Led Policing (ILP)
3. Create realistic synthetic dataset to feed the Security Data Space for LEAs operational needs
4. Data analytics training for LEAs to be further exploited via ECTEG, CEPOL
5. AI Impact Assessment framework specifically tailored to LEAs is crucial to achieve safe and trustworthy AI products suitable for use in law enforcement.





*Thank
you*



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