

## Technical Annex

### *Administrative Arrangement DG JRC/DG HOME*

## 1 Background

The use of openly available sources is becoming more and more important for investigative purposes in law enforcement and counter terrorism. For this purpose specialised tools and methods are needed to find, select and acquire publicly available information. Gathered information needs to be analysed<sup>1</sup>. The Internet and its services form a public medium with global reach, easy access and fast information propagation. The massive amount of information carried by this medium requires the use of automated tools to counter illegal activities. These illegal activities may be of pure criminal nature, such as commercial fraud, or are part of campaigns by terrorists to disseminate radical content, recruit new people and train and prepare for violent attacks.

Law enforcement authorities need to meet these new challenges by building and reinforcing existing capabilities for online investigations. Furthermore, the ability to cope with the volume of data and the plurality of languages on the Internet is crucial factor for the effectiveness of the response against threats and criminal acts on the Internet.

The Joint Research Centre (JRC) and DG Home Affairs (DG HOME) have worked together to improve the capacity of law enforcement authorities in the use of open source information. One part of this joint work was to create a community of practitioners in the field. This has been achieved by organising workshops to foster the exchange of best practices between EU institutions and authorities in the Member States (MS) of the EU. Another part was to develop specific software tools based on JRC research and share these tools with MS authorities. These tools comprise the server based EMM suite and the EMM OSINT Suite desktop toolkit.

The participation of law enforcement analysts from the MS in the organised workshops has steadily increased in the past years. To sustain this trend and the previous work the JRC proposes to continue the event series. Even though the software tools are already in use by a number of MS authorities further dissemination is possible. This dissemination should be based on an evaluation of the current use and accompanied with on-site tutorials and trainings.

## 2 Purpose of the Services

The purpose of the Administrative Agreement (AA) is split into the following work areas:

1. Improve capabilities of Member States law enforcement authorities in the use of open source information to combat crime and terrorism
2. Support DG HOME's strategic analysis and response capability with EMM tools and accompanying services

## 3 Work Packages

The following paragraphs describe the different work packages to achieve the contents of the AA as outlined by the Terms of References.

<sup>1</sup> The overall process is commonly known as Open Source Intelligence (OSINT)

### **3.1 Improve Member State Capabilities in the use of Open Source Information**

The JRC has learned based on experiences from previous agreements and further discussions with law enforcement authorities that more and more police and anti-fraud units make use of open source information to counter fraud, corruption and criminal activities. Furthermore, authorities of various Member States move forward in different speeds developing tools and techniques in the field. In order to make these tools and the gained experiences known to an audience beyond the national border, a pan-European community of law enforcement professionals has been established and needs to be sustained. This community plays a strong role in developing best practices on the European level to accelerate the development of common standards and methods.

#### **3.1.1 Community of OSINT practitioners in law enforcement**

##### **3.1.1.1 OSINT Workshop for MS practitioners**

Organise three workshops for law enforcement practitioners about the use of open source information and its practical application.

This workshop focuses on the practical application of tools and techniques and forms a complementary format to other events which address more political and strategic issues. The annex contains a description of this workshop format based on experiences from previous years.

##### **Deliverables:**

- Three workshop for MS law enforcement authorities at JRC premises<sup>2</sup>
- Supporting event web site with online workshop material<sup>3</sup>

##### **Time and Effort:**

- 6 PM (Multiple instructors are needed for the workshop to provide parallel tracks)
- Workshop Cost (expert expenses, venue, catering, etc.)

##### **3.1.1.2 Workshop Evaluation**

Evaluate the practitioner's workshop format to ensure the event meets the needs of the participants.

The workshop is designed as a combination of case studies and hands-on exercises. To make sure that this format meets the needs of the participants from the MS, the JRC conducts a survey to be able to tailor future workshop to participant's expectations.

##### **Deliverables:**

- On or offline survey to evaluate workshop results
- Evaluation of survey and results summary
- Changes to next event formats

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<sup>2</sup> Upon mutual agreement the workshop may take place in a different location

<sup>3</sup> As part of a previous AA a password protected web site has been created to carry OSINT community material, such as tutorials and exercises. This web site will be used also for future events.

**Time and Effort:**

- 2 PW

**3.1.1.3 Workshop for EMM institutional users**

In 2013 DG HOME organised a workshop for institutional users of EMM tools. This workshop focuses on the use of EMM software tools in security and public health domains. At least one follow-up workshop will be organised during the duration of the agreement.

**Deliverables:**

- One workshop for institutional users of EMM tools at JRC's premises

**Time and Effort:**

- 2 PW

**3.1.2 Disseminate JRC developed software tools**

Even though the software tools are already in use in a number of MS, further dissemination is possible. In order to tailor a dissemination note mailing the use of the software should first be evaluated with the current users and the participants of previous workshops.

**3.1.2.1 Usage evaluation of EMM OSINT Suite**

Conduct a user survey to evaluate the use of the EMM OSINT Suite tool.

The EMM OSINT Suite toolkit is already used by a number of law enforcement authorities to exploit open source information<sup>4</sup>. In order to assess its current application and to gain feedback for future improvements the JRC conducts a user survey with current and prospective users of the software.

**Deliverables:**

- On- or offline survey to evaluate software use
- Evaluation of survey and results summary

**Time and Effort:**

- 1 PM

**3.1.2.2 Disseminate EMM OSINT Suite**

Provide further law enforcement authorities with the EMM OSINT Suite toolkit.

Based on the evaluation results and in collaboration with DG HOME the JRC further distributes the software tools to acquire new users. This acquisition can be done by sending out dissemination notes or by using the network of current users for referral.

**Deliverables:**

- Updated information material
- List of prospective client authorities
- Mailing to MS authorities

**Time and Effort:**

- 2 PW

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<sup>4</sup> See annex for complete list of licensees

### **3.1.2.3 On-Site user training for existing and new users**

Provide on-site trainings for new and existing users of the EMM OSINT Suite.

The EMM OSINT Suite toolkit has been extended with a number of powerful functional improvements during the previous AA. These functions are explained using the tutorial section of the community web site. However, to customize the software and explain advanced functions the JRC offers on-site trainings to existing and new users of the software. These on-site trainings help to drive adoption of the software and are used to gather immediate user feedback.

The annex contains a description of this on-site training format.

#### **Deliverables:**

- Updated and customized training material
- Training delivery on-site

#### **Time and Effort:**

- 1 PW per on-site training
- Mission to MS authority

### **3.1.3 Improve and sustain EMM OSINT Suite operational use**

The EMM OSINT Suite software which has been developed for law enforcement use is currently in operational use by a number of law enforcement authorities in the MS. In order to keep this software operational limited effort is needed to fix errors and adapt existing modules to changes of Internet services the software relies on<sup>5</sup>.

The JRC is conducting ongoing research into text and information mining. To bring these research results into operational use the existing software tools need to be enhanced with features requested by the current and prospective users of the software. The results of the usage evaluation (see 3.1.2.1) shall form a basis to plan improvements to the software.

#### **3.1.3.1 Operational updates EMM OSINT Suite**

To keep the software operational, at least a quarterly release is necessary with changes in the software's parameters to stay current with search engines and internet services it relies on.

#### **Deliverables:**

- Quarterly bug fix releases
- Release notes and mailing

#### **Time and Effort**

- 5 PM

#### **3.1.3.2 Improvements to EMM OSINT Suite**

If users in the MS request certain critical features additional software modules need to be implemented. The usage evaluation (see 3.1.2.1) and close collaboration with law enforcement authorities shall form the basis to decide on improvements.

#### **Deliverables:**

- Software release with enhanced or new software modules
- End-user documentation

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<sup>5</sup> For example, the search module relies on outputs of internet search engines. These search engines change constantly as must the dependent module to be kept operational.



- Release notes and mailing

**Time and effort:**

- 4 PM

### **3.2 Support DG HOME Open Source Information gathering and analysis capacity**

DG HOME has established a strategic analysis and response capacity<sup>6</sup> using JRC's EMM software tools. To provide smooth operations and to facilitate the transfer of technical knowledge, on-site JRC trained experts are provided. The staff will be based mainly in Brussels but with the opportunity to touch base in Ispra at specific intervals to allow transfer of the latest technical knowledge to DG HOME's capacity.

#### **3.2.1.1 On-site operations support with JRC trained experts**

Two JRC trained experts (2FTE) will be based in Brussels with a number of deliverables. The JRC team in Ispra will provide training and support to the on-site experts.

**Deliverables:**

**On-site experts:**

- Operations support to keep EMM tools running
- Development of new categories, refinement of new categories to fit DG HOME areas of interest.
- Production of open source daily products.
- Reduce operational risk by provision of necessary expertise on the use of EMM tools to DG HOME staff
- Facilitate common understanding of the system

**JRC-Ispra:**

- Training and support to the experts to keep them current on the latest EMM products and developments.

**Time and Effort:**

- 24 PM Consultant
- 8 visits to JRC Ispra

### **3.3 Reporting**

The following reports will be delivered to document the work progress.

#### **3.3.1 Inception Report**

- Submit draft inception report 2 weeks after start of AA execution.
- Submit revised inception report within one week after kick-off meeting. With the following content:
  - Project plan for first six months
  - Team composition
  - Results of kick-off meeting

<sup>6</sup> Strategic analysis and response STAR established within Unit A1 Crisis Management and fight against terrorism

### **3.3.2 First interim Report**

- Submit draft interim report to DG HOME within the 6 months from the start of execution of the AA.
- Report Content:
  - Executive summary to give an update on the carried out activities
  - Progress report with results and encountered difficulties
  - Interim findings and conclusions on work packages
  - Updated work plan for remaining period
  - Annexes listing gathered information, relevant contacts made and meetings held
- Submit updated documents within the deadline as stated in the TORs after receiving DG HOME's comments

### **3.3.3 Second Interim Report**

- Submit draft interim report within 14 months from the date on which the execution of the tasks of the AA has started.
- Report Content:
  - Executive summary consisting of an update on the activities carried out
  - Progress report with results and encountered difficulties
  - Updated work plan for the remaining period
  - Annexes listing gathered information, relevant contacts made and meetings held
- Submit updated documents within 14 days after receiving DG HOME's comments

### **3.3.4 Final Report**

- Submit draft final report including a financial report with detailed effective costs per work package within 23 months after start of AA execution and present it to DG HOME. The report describes the work accomplished and the results obtained when carrying out the contract.
- Submit final report within 14 days reflecting DG HOME's comments for the complete AA.

The needed steering meetings with DG HOME will be held in Brussels.

## **3.4 Project Management**

Overall project management and coordination, ensuring correct and timely execution of the work packages and deliverables

## **4 Expected Results and Potential Difficulties**

The successful organisation of the workshops requires contributions from partners in the MS. The work from the previous AA with DG HOME allowed the JRC to form a personal network and close working relationships with many professionals of law enforcement authorities. This allows the JRC to rely on experts who are willing to contribute in a substantial way ensuring relevant results. For the other work packages the JRC sees no major challenges.

## 5 Team Organisation

The team to deliver the milestones of the different work packages is made up of JRC staff (officials, grant holders, contract agents) but may be supported by consultants if appropriate. The JRC ensures that all involved members of staff have the appropriate security clearances if needed for the task at hand.

- [REDACTED]  
• Project Manager EMM Tools

- [REDACTED], Technical/Scientific Officer:
  - Overall Coordination
  - Responsible for the delivery of the work packages
  - EMM OSINT Suite evaluation / maintenance / development
  - Workshops and training

- [REDACTED], JRC Scientific [REDACTED]:
  - EMM OSINT Suite evaluation / maintenance / development
  - Workshops and training

Two consultants to provide on-site operations support to DG HOME's strategic and analysis response capacity

For the OSINT workshops further JRC staff is needed to perform the practical hands-on sessions.

## 6 Deliverables Summary

Ref	Description	Due Date
3.1	<i>Improve MS capabilities using open sources</i>	
3.1.1	<i>Community of OSINT practitioners</i>	
3.1.1.1	Workshop for OSINT practitioners	3 events (2014,2015,2016)
3.1.1.2	Workshop Evaluation	after each workshop
3.1.1.3	Workshop for EU institutional users	before end of agreement
3.1.2	<i>Disseminate JRC developed software</i>	
3.1.2.1	Usage Evaluation EMM OSINT Suite	09/2014-12/2014
3.1.2.2	Dissemination EMM OSINT Suite	09/2014-end of agreement
3.1.2.3	On-site user training EMM OSINT Suite	on request by MS authorities
3.1.3	<i>Improve and sustain EMM OSINT Suite operational use</i>	
3.1.3.1	Operational Updates EMM OSINT Suite	09/2014-End of agreement
3.1.3.2	Improvements EMM OSINT Suite	on request by MS authorities
3.1.4	<i>Operations Support to DG HOME STAR</i>	
3.1.4.1	On-site operations support	01/2015-12/2015
3.2	<i>Reporting</i>	
3.2.1	Inception Report	AA start + 2 weeks: Draft Kick-off + 2 weeks: Final
3.2.2	First interim report	AA start + 6 months: Draft 2 weeks after comments: Final
3.2.3	Second interim report	AA start + 14 months: Draft 2 weeks after comments: Final
3.2.4	Final Report	AA start + 23 months: Draft 2 weeks after comments: Final
3.3	Project Management	



## 7 Indicative Cost Breakdown\*

Item	PM	Consultant PM	Spec Credits	Mission Days	Consultant Cost	Staff Cost	Mission Cost	Spec Credits	Total Cost
3.1.1.1 OSINT Workshop		6,00				58000		25000	83000
3.1.1.2 Evaluation of Workshop		0,50				5000			5000
3.1.1.3 Workshop EMM Institutional Users		0,50				5000		5550	5000
3.1.2.1 Usage Evaluation EMM OSINT Suite		1,00				9500			9500
3.1.2.2 Dissemination EMM OSINT Suite		0,50				5000			5000
3.1.2.3 On-site user training EMM OSINT Suite		2,00	8	2		17500	9500		27000
3.1.3.1 Operational Updates EMM OSINT Suite		5,00				48905			48905
3.1.3.2 Improvements EMM OSINT Suite		4,00				40000			40000
3.1.4.1 On-site operations support	24		5	2	240000		8000		248000
3.2 Reporting		1,00	4	1		10000	3500		13500
3.3 Project Management		2,00	4	1		15000			15000
					240000	213905	21000		499905

### Notes

Consultant costs are calculated using an average of 10000 €/PM, according to the average daily cost of consultants under the current framework contracts.

Staff costs are calculated using an average of grades tasked with the work packages

\* All amounts are overhead included using marginal overhead cost model

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## **8 Annex**

- Workshops and Trainings
  - Workshop for Practitioners
  - On-Site Training
- EMM OSINT Suite
  - System Description
  - Licensed Users



## 8.1 Workshop for Practitioners

### 8.1.1 Description and Objectives

The OSINT Workshop is the central yearly community event. Its main purpose is to give OSINT practitioners a forum to exchange best practices and an opportunity to network on the European level. The event combines presentations of best practices case studies with hands-on exercises utilising the latest EMM OSINT tools. For the hands-on exercises the participants are split into smaller working groups.

### 8.1.2 Target Audience

Experts of law enforcement authorities in the Member States of the EU dealing with investigations utilising open sources. Participants should have practical experience in security and crime areas and using open source is an integral part of daily work. Attendees who have a strong interest to learn the use of OSINT tools will also benefit from this workshop.

### 8.1.3 Agenda

As an example, the following agenda was used in 2013. The workshop sessions are held in parallel in different rooms. The participants are divided into groups of interest and level of knowledge (EMM Server / EMM OSINT Suite, Beginner/Advanced).

Day 1:

Morning:

- Welcome Remarks
- Case Study 1
- Case Study 2

Afternoon:

- Introduction Workshop Sessions (split into parallels working groups)
- Workshop Session 1
- Wrap up

Day 2:

Morning:

- Welcome Day 2
- Case Study 3
- Workshop Session 2

Afternoon:

- Workshop Session 3
- Workshop Session 4

Day 3:

- Welcome Day 3
- Workshop Session 5
- Wrap-up and Feedback

### 8.1.4 Organisational Details

Duration: 2.5 days

Number of participants: up to 50

Venue requirements: Auditorium, Up to 4 Rooms for parallel working groups, Internet Access



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## 8.2 On-Site Training

### 8.2.1 Description and Objectives

The on-site training is used to give an in-depth introduction on how to use the EMM OSINT Suite software toolkit. Depending on the level of knowledge the second day can also be used to develop customisations of the software for the particular end user.

### 8.2.2 Target Audience

This training is intended for existing or prospective users of the EMM OSINT Suite software.

### 8.2.3 Agenda

The agenda consists of a guided walk-through of the different functions of the software. The event can be delivered at an introductory or advanced level. For the advanced level the first day can be skipped and the second day can be used to work on user specific customisations and parameterisation of the software.

#### Day 1

- Installing EMM OSINT Suite (Windows/Linux/Mac OSX)
- Getting Started
- Data Acquisition 1
  - Search
- Entity Extraction 1
  - Name Variants
  - Basic Regex Entity Types
- Reporting and Data Export
  - Using pre-defined reports
  - Customising pre-defined reports

#### Day 2

- Data Acquisition 2
  - Crawling
  - Local Import
- Entity Extraction 2
  - Custom Name Variants
  - Custom Regex Entity Types
- Reporting and Data Export
  - Defining custom reports
  - Exporting to 3<sup>rd</sup> party tools

### 8.2.4 Organisational Details

Duration: 1-2 days

Number of participants: up to 8

Venue requirements: Internet Access

## **8.3 EMM OSINT Suite**

### **8.3.1 System Description**

#### **8.3.1.1 Overview**

The EMM Open Source Intelligence Suite (EMM OSINT Suite) is a desktop software tool to find, acquire and analyse data from the Internet. It empowers use to gather intelligence from open available sources by providing automated tools. This removes the need to search manually through vast data sets.

The software provides tools to support several phases of the intelligence gathering process: Documents can be downloaded from the public Internet as well as from local sources. A built-in entity extraction engine identifies person and organisation names, locations and address details. The extracted information is presented to the human analyst facilitating the analysis work.

#### **8.3.1.2 Document Acquisition**

The EMM OSINT Suite provides a browser based search interface which allows to query internet search engines and to download the result documents to disk. In addition to this search module, the software contains a crawler component. This component is used to acquire the content of targeted websites. The crawler follows the link structure of a targeted website and downloads relevant pages to disk.

Locally stored documents can be imported into the system by simply copying them into a predefined folder.

#### **8.3.1.3 Information Extraction**

The EMM OSINT Suite provides an entity extraction engine based on research results of the Joint Research Centre in information extraction. The extraction engine identifies the following entity types: Person Name, Organisation and Company Names, Locations, Contact details (phone numbers, Email addresses, URLs). The extraction is performed in a high-performance and extendable way. It relies on internal databases for person names and location names and is able to derive new entities using a rule-based guessing step.

The found entities are marked up in the source documents so the analyst using the software can quickly navigate to relevant text locations.

#### **8.3.1.4 Information Analysis**

The extracted entities are presented in a straightforward way as a list of related entities of a document. Also, relationships between entities and documents are shown. To give the analyst a better overview of the found data, a graph viewer is provided. This graph viewer presents entities as nodes and the relationships as links between the nodes. Different layout options ease the process of deriving intelligence from the graphical overview.

#### **8.3.1.5 System Requirements**

The software runs with relative modest system requirements to make its functions available to a large group of users.

The current version requires the following system requirements:

- Operating Systems
  - Microsoft Windows 7 and newer operating system (32-bit 64-bit)
  - Linux (32-bit or 64-bit)



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- Mac OS X
- Intel Core i3 or better CPU
- 4GB of main memory
- 500GB of disk space
- Broadband Internet Connection (2MB or better)

### 8.3.2 Licensed Users

The software has been developed under an agreement with DG HOME of the European Commission to support EU policies. It is available under an End Users License Agreement for all EU institutions and law enforcement authorities in the Member States of the EU.

The EMM OSINT Suite has been licensed to the following authorities:

- Belgium Police, Veurne, Belgium
- Centre for Bio security and Bio preparedness, Copenhagen, Denmark
- Ministry of Interior, Vienna, Austria
- Police Nationale DGPN, Paris, France
- Federal Judicial Police – Gent Branch, Gent, The Netherlands
- Internet Service Centre - Tax Administration, The Netherlands<sup>i</sup>
- Ministry of Finance, Tax Inspection, Brussels, Belgium
- Ministry of Interior, Police, Ljubljana, Slovenia
- Police of Cyprus, Counter Terrorism Office, Nicosia, Cyprus
- Police Rotterdam Region, Rotterdam, The Netherlands
- Federal Police of Belgium, Brussels, Belgium
- VSSE (Interior Intelligence), Brussels, Belgium
- French Atomic Authority CEA, Fontenay aux Roses, France
- Danish Tax and Customs Administration, Højbjerg, Denmark
- Finnish Tax Administration, Helsinki, Finland
- General Directorate of Customs, Prague, Czech Republic
- Customs Chamber, Opole, Poland
- Police Blekinge Region, Karlskrona, Sweden
- Italian Customs and Monopolies Agency, Rome, Italy
- European Monitoring Centre for Drugs and Drug Addiction, Lisboa, Portugal (EU Agency)
- Tax Administration, Stockholm, Sweden
- HM Revenue & Customs, London, UK
- Cranfield Forensic Institute, Cranfield, UK
- Australian Customs Service, Melbourne, Australia
- Houston Police, USA
- Europol, The Hague, EU Agency<sup>ii</sup>

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<sup>i</sup> Using the software based on a Memorandum of Understanding

<sup>ii</sup> Using the software based on a high level collaboration agreement