<table>
<thead>
<tr>
<th>Day</th>
<th>08:00-09:30</th>
<th>09:30-10:30</th>
<th>10:30-11:30</th>
<th>11:30-12:30</th>
<th>12:30-13:30</th>
<th>13:30-14:30</th>
<th>14:30-15:30</th>
<th>15:30-16:30</th>
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</thead>
<tbody>
<tr>
<td>Day 2</td>
<td>CERN to address Organised Crime and money laundering</td>
<td>Morning plenary</td>
<td>Workshop: Scenario Organised Crime and money laundering (Participants assisted by materials)</td>
<td>Lunch</td>
<td>Workshop: Scenario Organised Crime and money laundering (Participants assisted by materials)</td>
<td>Dinner</td>
<td>Workshop: Scenario Organised Crime and money laundering (Participants assisted by materials)</td>
<td>Forward drive</td>
</tr>
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<td>Day 3</td>
<td></td>
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<tr>
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</table>
Open Source Intelligence (OSINT)

INTRODUCTION

What is OSINT?

- **Open Source Intelligence**: an intelligence gathering method which involves finding data in sources publicly, legally available for everyone and also analyzing it to be used in an intelligence context.

Digital footprint

- Every action on the Internet leaves a trace behind.
- At least a username, an e-mail address and a password is necessary almost everywhere.
- Once it is there, it can be only hardly or never removed...
Intelligence gathering methods

- HUMINT – Human Intelligence
- MASINT – Measurement and Signature Intelligence
- GEOINT – Geospatial Intelligence
- SIGINT – Signals Intelligence
- TECHINT – Technical Intelligence
- MARKINT – Market Intelligence
- OSINT – Open Source Intelligence
- Etc.

OSINT vs. other intelligence gathering methods

- In other intelligence gathering methods the hardest part is obtaining the data while in OSINT the major difficulty is to analyze and verify it
- It became essential after the Internet explosion
- 90% of data processed by intelligence services is based on open sources

OSINT vs. other intelligence gathering methods

- Advantages:
  - Easy to access
  - Cheap or free
  - Big volume of data
  - Good chance to get information
  - Can be used without permission
  - Open sources usually record historical data too
- Disadvantages:
  - Time consuming
  - Needs new type of skills and knowledge
  - Big volume of data
  - Many fake information, the problem of reliability of data
  - You need other sources for verifying

PRACTICAL EXERCISES
OSINT methods

- **Passive**: no interaction with the target
  
  "The quieter you become the more you are able to hear."
  
  (Ram Dass)

- **Active**: taking some intrusive steps is necessary to get the information (e.g. follow an Instagram profile, send a friend request or join a group on FB, etc.)

  "The line between ACTIVE OSINT and HACKING is very thin."
  
  (Anybody who present OSINT)

---

Open sources

- Media: newspapers, magazines, radio, television...
- Public databases: libraries, universities, governmental bodies, NGOs, research facilities, private companies...
- Publications: governmental reports, studies, academic papers...
- Public conferences and other public events...
- **World Wide Web**

---

What open sources do we have?

Choosing information sources

Why is the Internet is the most important source?

- Easy to access
- Used by everyone – including criminals
- Timeless and timely
- The quantity of the data on the world wide web grows exponentially
- Contains everything mentioned before and a lot more
- There are types of data which could be obtained only from the web
Exponential growth in the last two decades

**MONTENEGRO**
- Country Size: 14,026 sq km
- Capital City: Podgorica - 156,000 (2019)
- 439,624 Internet users in Dec 2018, 69.9% penetration
- 320,000 Facebook subscribers in Dec 2017, 50.8% penetration
- Mobile Speed: 44.60 Mbps Download - 15.30 Mbps Upload
- Fixed Broadband Speed: 36.84 Mbps Download - 6.05 Mbps Upload

**HUNGARY**
- Population: 9,688,847 (2018)
- Country Size: 92,966 sq km
- Capital City: Budapest - 1,752,704 (2017)
- 8,588,776 Internet users in Dec 2017, 88.6% penetration
- 5,300,000 Facebook subscribers in Dec 2017, 54.7% penetration
- Mobile Speed: 48.16 Mbps Download - 16.86 Mbps Upload
- Fixed Broadband Speed: 105.74 Mbps Download - 42.46 Mbps Upload

Source: www.statista.com

**CEPOL**

4,207,191,334
Internet Users in the world

1,681,478,827
Total number of Websites

84,307,944,897
Emails sent today

2,284,377,549
Videos viewed today on YouTube

26,509,248
Photos uploaded today on Instagram

44,247,347
Tumblr posts today

2,148,487,084
Google searches today

2,039,805
Blog posts written today

245,762,530
Tweets sent today

2,479,495,293
Facebook active users

698,135,684
Google+ active users

346,356,694
Twitter active users

Source: www.internetlivestats.com
What is a proxy?
- A proxy server acts as a middleman in your internet traffic, so that your internet activities appear to come from somewhere else.

What is a VPN?
- Virtual Private Network also makes your traffic appear as if it comes from somewhere else, but it is set up at the operating system level, so the VPN connection captures the entire network connection of your device.
Proxy vs. VPN

What is TOR?
- An encrypted network that gives anonymity for the users and requires a specific software to access it, probably the best solution for anonymity.
Online Databases

- **Company registers**: Information about the directors, shareholders, incorporation dates, annual reports, addresses, jurisdiction, connections...

- www.opencorporates.com

- **Tip**: try free tolls before paid services

- **Tool**: European e-Justice Portal – Company Registers (all EU members, in all EU languages)
Online Databases

- **Online auction sites**: E-bay, Amazon, AliExpress, Wish
- **Tip**: search on E-bay by username
Thank you for your attention!

Budapest, HUNGARY

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Search Engines

- **The BIG ONES**: Google, Bing (Yahoo), Yandex (Russia), Baidu (China)
- Special search engines:
  - Country based search engines
  - People search engines
  - Social media search engines
  - Deep Web search tools
  - Etc.
- Tip: always check Bing also
- Tool: use [www.google.com/ngr](http://www.google.com/ngr) (No Country Redirection)

2018 Market share of search engines

Source: [www.statista.com](http://www.statista.com)
Google Advanced Search (www.google.com/advanced_search)

Google Search Operators

- Search social media: @ in front of a word: @twitter
- Search for a price: $ in front of a number: Nike Kobe 11 $200
- Search hashtags: # in front of a word: #hwapo
- Exclude words from your search: - in front of a word you want to leave out: jordan -basketball -nba -shoes

Google Search Operators

- Search for unknown words: * in your phrase where you want to leave a placeholder: best nba * in the world
- Combine searches: OR between each search query: Shaq OR Shaquille
- Search a specific site: site: in front of a site or domain: site:nba.com or site:.gov

Google Search Operators

- See Google’s cached version of a site: cache: in front of the site address: cache:www.gov.me
- Search a specific filetype: filetype: in front of file extension: filetype:.doc filetype:.ppt
- Search keyword in URL: inurl: in front of word: inurl:nba
- Define the meaning of a word: define: in front of word: define:police
EXERCISE 1.
- Search for Samsung laptop sold on www.vatera.hu
  
site:vatera.hu "samsung laptop"

EXERCISE 2.
- Search for MS Word documents on Montenegro Government official website
  
site:gov.me filetype:doc

EXERCISE 3.
- Search for presentations on cybercrime on United Nations official website
  
site:un.org filetype:ppt "cybercrime"

EXERCISE 4.
- Search for documents on Montenegro Government official website related to money laundering
  
site:gov.me filetype:doc "money laundering"

Google Reverse Image Search (image.google.com)
- Search for similar images
- From a URL or upload an image
- Search by image works best when the image is likely to show up in other places on the web
- Only similar images, not the same images!
- Be careful! Any images you upload and search for might be stored by Google...
Google Alerts (google.com/alerts)

- Monitor the web for interesting web content
- You will get emails when new results for a topic show up in Google Search
- You can get info about news, products or mentions of a person
- You can set how often, how many, what language, what region, what sources, etc.
Google Alerts (google.com/alerts)

Alerts
Monitor the web for interesting new content

- How often: As much as a day
- Sources: Automatic
- Language: English
- Region: Any Region.
- How many: Only the best results

Enter email: Create Alert Hide options

Google Translator (translate.google.com)

- We can simply translate what we want
- Usually identifies the language automatically
- Words, sentences, even a whole website
- App. 100 different languages (no Montenegrin, but Serbian is available)
- Far from perfect, but enough to get an idea...
Google Maps (maps.google.com)

- Google Maps and Google Earth, (Bing Maps)
- We can check almost any address without going out – even in the past
- Especially useful before an arrests and a house searches
- Tip: Always check the date at the left upper corner
- Tool: Google Street View and Google Maps Timeline
Thank you for your attention!

Budapest, HUNGARY

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Open Source Intelligence (OSINT)
SOCIAL MEDIA

Number of social media users 2010-2021

Most popular social networks worldwide of (August 2018)

Source: www.statista.com
Source: www.dreamgrow.com
Social media for law enforcement

- The most important source, the backbone of every OSINT investigation
- We can obtain the most personal and up to date information about a target
- Nearly everybody was, is, or will be on some kind of a social media site
- **Tip:** check all the popular social media websites in your country
- **Tools:** Let’s try some!

Source: www.dreamgrow.com

![Facebook logo](facebook.com)

Source: www.facebook.com
Some statistics on Facebook users

- 87% of online users of age 18-29 are on Facebook
- Half of them checks Facebook when they wake up
- The average time spent on Facebook per visit is 20 minutes
- Average Facebook user has 155 friends
- Average number of pages, groups and events a user is connected to is 80

What kind of data can we obtain from social media sites?

- Personal information: age, birth place, addresses, education, recent and past workplaces, hobbies...
- Interpersonal relations: relatives, relationships, friends...
- Recent photos and videos of the person and his/her environment...
- Visited places and events...
- Religion, political views...
- Financial status, owned properties (car, house etc.), travels, hobbies...
- And so many more...

Some statistics on Facebook content

- 350 million photos uploaded every day, with 4,000 uploads per second
- Every 20 minutes 1 million links are shared, 20 million friend requests and 3 million messages are sent
- 55 million status updates are made every day
- Every 60 seconds 1 million comments are posted

What types of content are on Facebook?

- Personal profile
- Ad
- Page
- Group
- Event
- Marketplace

If I'm not on Facebook for more than 2 days...
...CALL THE POLICE!!!
Personal Profile

- Timeline, About, Friends, Photos, More... (Videos, Check-ins, Sports, Movies etc.)
- The profile can be fully visible (public) or only partially visible (protected or private)
- **But:** some of the user actions cannot be made fully private (e.g.: liked photos)

Pages

- Used by businesses, organizations, celebrities, etc.
- They have some unique solutions like number of viewers, activities on the page, etc.
- **But:** a personal profile account is essential to create and host a page
Facebook Ad

Facebook Group
- Members can share posts, media, documents
- Has at least one administrator
- Types of groups:
  - **Public:** Anyone can see the posts or join the group
  - **Closed:** Only members can see the posts, you have to join
  - **Secret:** You neither can see the group nor the posts, so it is not easy to join...
Facebook Event

- Types of events:
  - Public: Anyone can see the event, search for it or join to it, even if they are not friends with host.
  - Private: Only invited users can see and join the event, host can choose to let guests invite others.

- Has at least one host.
FACEBOOK User ID

- What we usually need:
  - As many information as we can get about our target
  - The name of a person is often not enough
  - We need the user identification number ("USER_ID")

- Getting the "User_ID":
  - Browser add-ons
  - Collect from the page's source
  - Collect it from the URL
But do not forget

- Profile can be suspended/banned by Facebook because of too much searches
- Facebook is able to log your searches
- Your activity on Facebook affects your searches
- Your location affects your searches
- Different users can get different results
- What works today, probably won’t work tomorrow...

Don't Forget!
Instagram

- Photo/video sharing service
- Launched in 2010, acquired by Facebook in 2012
- Users can apply filters, add geotags, add hashtags
- About 800 million active users
- Few personal information
- Posts / Followers / Following / Images
- Focusing on user’s (media) posts
- Can be shared directly into Facebook account
- Private profile: you cannot see any post unless you follow the profile owner

Most followers on Instagram (November 2018)

<table>
<thead>
<tr>
<th>Username</th>
<th>Followers in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cristiano Ronaldo</td>
<td>145</td>
</tr>
<tr>
<td>Selena Gomez</td>
<td>144</td>
</tr>
<tr>
<td>Ariana Grande</td>
<td>132</td>
</tr>
<tr>
<td>Kim Kardashian</td>
<td>120</td>
</tr>
<tr>
<td>Dwayne Johnson</td>
<td>119</td>
</tr>
<tr>
<td>Beyoncé</td>
<td>119</td>
</tr>
<tr>
<td>Kylie Jenner</td>
<td>118</td>
</tr>
<tr>
<td>Taylor Swift</td>
<td>112</td>
</tr>
<tr>
<td>Neymar</td>
<td>104</td>
</tr>
</tbody>
</table>

Source: www.statista.com

Instagram Profile

Experience the best version of Instagram by getting the app.
Twitter

- Launched in 2006 for online news and social networking
- 326 million monthly active users (2018 Q3)
- 500 Million tweets a day (2018 Q3)
- Tweets are publicly visible by default, but the user can set restrictions (for example only for subscribers)
- Tweets can be forwarded, this called retweeting
- Posts can be grouped through hashtags (#something)
- Retweeting and replying to others can be directly made via @ tag (@username)
Most Twitter users by country (October 2018)

Source: www.statista.com

Twitter Profiles Stats in Montenegro

1. Miloš Vučinić (@MiloSVucinic) 116 594 784
2. Štefan Jovićić (@StefanJovicic) 155 180 094
3. Šantala Torres (@ShantaTorres) 708 15 289
4. Nebojša Medojević (@NebojshaMedojevic) 47 15 105
5. Cafe del Montenegro (@CafeDelMontenegro) 2 614 11 439
6. Vida Crno Gori (@VidCrnaGori) 3 9 735
7. MBC (@MBGuba) 101 4 702
8. Filip Vujanović (@FVujanovicCDM) 62 4 259
9. Dukagjin Telekom (@CTelekom) 100 2 749

Source: www.socialbakers.com

LeBron James (@KingJames)

Felt Great to be back! 🎓❤️️!! 😎

Cleveland Cavaliers (@Cavs)

Thank you. @KingJames! 😁

1,566 Retweets 12,512 Likes

Ticket your reply

Entering to Good luck
Thank you for your attention!

Budapest, HUNGARY

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