

# BEST PRACTICES IN THREAT INTELLIGENCE

GATHER, DOCUMENT, ANALYSE AND CONTEXTUALISE IN-

CIRCL / TEAM MISP PROJECT

MISP PROJECT

<https://www.misp-project.org/>

MISP PROJECT



**MISP**  
**Threat Sharing**

# OBJECTIVES

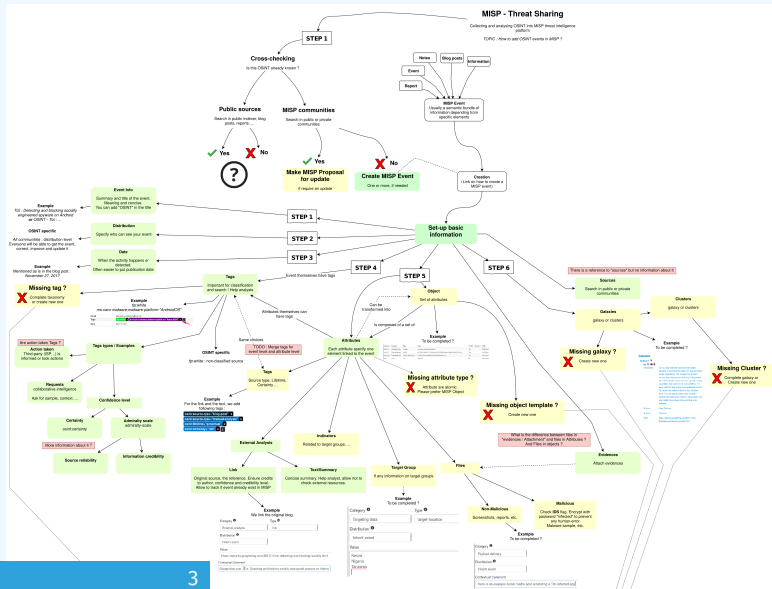
- Learn how to use MISP to support common OSINT gathering use-cases often used by SOC, CSIRTs and CERTs
  - ▶ Use practical exercise examples<sup>1</sup>
  - ▶ The exercises are based on **practical recent cases to model and structure intelligence** using the MISP standard
- Improve the data models available in MISP by exchanging live improvements and ideas
- Be able to share the results to the community at the end of this session

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<sup>1</sup><https://gist.github.com/adulau/8c1de48060e259799d3397b83b0eec4f>

- **Cyber threat intelligence (CTI) is a vast concept** which includes different concepts, methods, and workflows
  - ▶ Intelligence is defined differently in the military than in the financial sector than in the intelligence community
- **MISP project doesn't want to lock an organisation or a user into a specific model.** Each model is useful depending on the objectives of an organisation
- A set of pre-defined knowledge base or data-models are available and organisations can select (or create) what they need
- During this session, an overview of the most used taxonomies, galaxies, and objects will be described

# OVERALL PROCESS OF COLLECTING AND ANALYSING OSINT



- Quality of indicators/attributes are important but **tagging and classification are also critical to ensure actionable information**
- Organizing intelligence is done in MISP by using tags, which often originate from MISP taxonomy libraries
- The scope can be classification (*t1p*, *PAP*), type (*osint*, *type*, *veris*), state (*workflow*), collaboration (*collaborative-intelligence*), or many other fields
- MISP taxonomy documentation is readily available<sup>2</sup>
- **Review existing practices of tagging in your sharing community, reuse practices, and improve context**

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<sup>2</sup><https://www.misp-project.org/taxonomies.html>

- **When information cannot be expressed in triple tags format** (*namespace:predicate=value*), MISP use Galaxies
- **Galaxies** contain a huge set of common libraries<sup>3</sup> such as threat actors, malicious tools, tactics, target information, mitigations, and more
- When tagging or adding a Galaxy cluster, tagging at the event level is for the whole event (including attributes and objects). Tagging at the attribute level is for a more specific context

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<sup>3</sup><https://www.misp-project.org/galaxy.html>

- **Words of Estimative Probability**<sup>4</sup> propose clear wording while estimating probability of occurrence from an event
- A MISP taxonomy called **estimative-language**<sup>5</sup> proposes an applied model to tag information in accordance with the concepts of Estimative Probability

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<sup>4</sup><https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/sherman-kent-and-the-board-of-national-estimates-collected-essays/6words.html>

[//www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/sherman-kent-and-the-board-of-national-estimates-collected-essays/6words.html](https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/sherman-kent-and-the-board-of-national-estimates-collected-essays/6words.html)

<sup>5</sup><https://www.misp-project.org/taxonomies.html>

# RELIABILITY, CREDIBILITY, AND CONFIDENCE

- The **Admiralty Scale**<sup>6</sup> (also called the **NATO System**) is used to rank the reliability of a source and the credibility of information
- A MISP taxonomy called admiralty-scale<sup>7</sup> is available
- US DoD **JP 2-0, Joint Intelligence**<sup>8</sup> includes an appendix to express confidence in analytic judgments
- A MISP predicate in estimative-language called confidence-in-analytic-judgment<sup>9</sup> is available

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<sup>6</sup><https://www.ijlter.org/index.php/ijlter/article/download/494/234>,

*US Army Field Manual 2-22.3, 2006*

<sup>7</sup><https://www.misp-project.org/taxonomies.html>

<sup>8</sup>[http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp2\\_o.pdf](http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp2_o.pdf),

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<sup>9</sup><https://www.misp-project.org/taxonomies.html>



- If the information is a **single atomic element**, using a single attribute is preferred
  - ▶ Choosing an attribute type is critical as this defines the automation/export rule (e.g. *url* versus *link* or *ip-src/ip-dst?*)
  - ▶ Enabling the IDS (automation) flag is also important, but *when you are in doubt*, don't set the IDS flag
- If the information is **composite** (ip/port, filename/hash, bank account/BIC), using an object is strongly recommended

# HOW TO SELECT THE RIGHT OBJECT?

There are more than 150 MISP object<sup>10</sup> templates.

As an example, at CIRCL, we regularly use the following object templates *file*, *microblog*, *domain-ip*, *ip-port*, *coin-address*, *virustotal-report*, *paste*, *person*, *ail-leak*, *pe*, *pe-section*, *registry-key*.

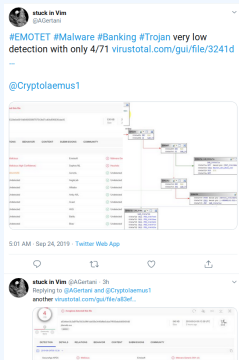
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<sup>10</sup><https://www.misp-project.org/objects.html>

# MICROBLOG OBJECT

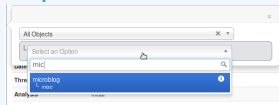
## Use case

A series of OSINT tweets from a security researcher. To structure the thread, the information, and keep a history.



## Object to use

The microblog object can be used for Tweets or any microblog post (e.g. Facebook). The object can be linked using *followed-by* to describe a series of post.



## Use case

- A file sample was received by email or extracted from VirusTotal
- A list of file hashes were included in a report
- A hash value was mentioned in a blog post

## Object to use

The file object can be used to describe file. It's usual to have partial meta information such as a single hash and a filename.

### Add File Object

Object Template	File v17
Description	File object describing a file with meta-information
Requirements	<b>Required one of:</b> filename, size-in-bytes, authenticash, ssdeep, md5, sha1, sha224, sha256, sha384, sha512, sha512/224, sha512/256, tlsh, pattern-in-file, x509-fingerprint-sha1, malware-sample, attachment, path, fullpath
Meta category	File
Distribution	Inherit event
Comment	

- Graphical overview of OSINT collection using MISP <https://github.com/adulau/misp-osint-collection>
- MISP objects documentation  
<https://www.misp-project.org/objects.html>
- MISP taxonomies documentation  
<https://www.misp-project.org/taxonomies.html>
- MISP galaxy documentation  
<https://www.misp-project.org/galaxy.html>