

# The Privacy Flag End-User Tools for Websites, Smartphones and IoT

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FLAG**



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**Privacy Flag Project** Enabling Crowd-sourcing based privacy protection for smartphone applications, websites and Internet of Things deployments



# Introduction



Privacy Flag engages with the crowd



Crowd evaluation



Android app (apps & IoT)



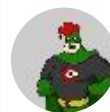
Browser add-on (websites)



Additional Input



Automated privacy enablers



Privacy Flag experts input



Evaluation for:

- Websites
- Mobile Applications
- IoT registered networks



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# PF smartphone app

- It allows users to get information on potential privacy risks from installed applications in their Android-powered mobile phones and tablets.
- It informs users whether installed software is considered privacy friendly or not friendly based on the analysis conducted by the Privacy Flag back-end system.



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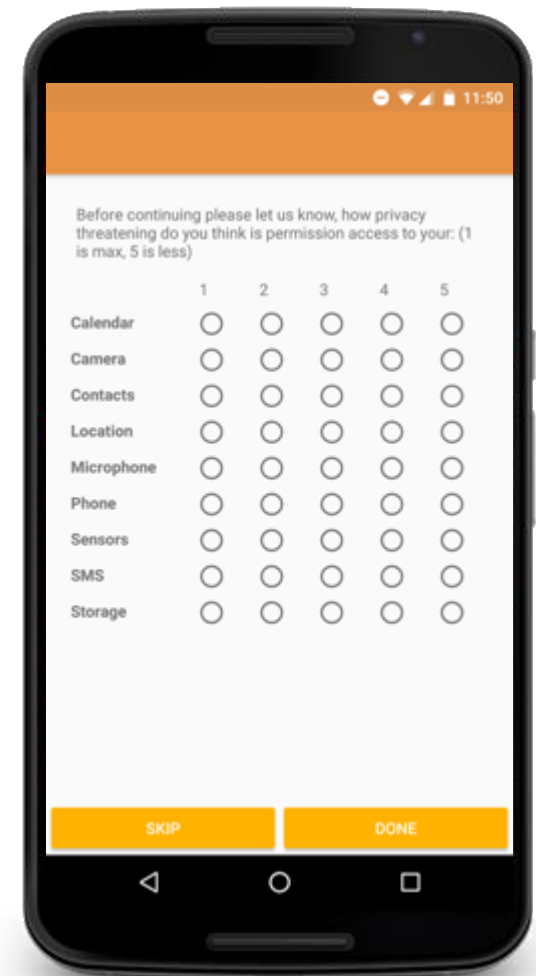
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# PF smartphone app

**Step 1:** Users open the app for the first time

User is asked to classify the 9 main Android permission categories, how threatening each one is



**Step 2:** shows a list of all installed applications based on the evaluation

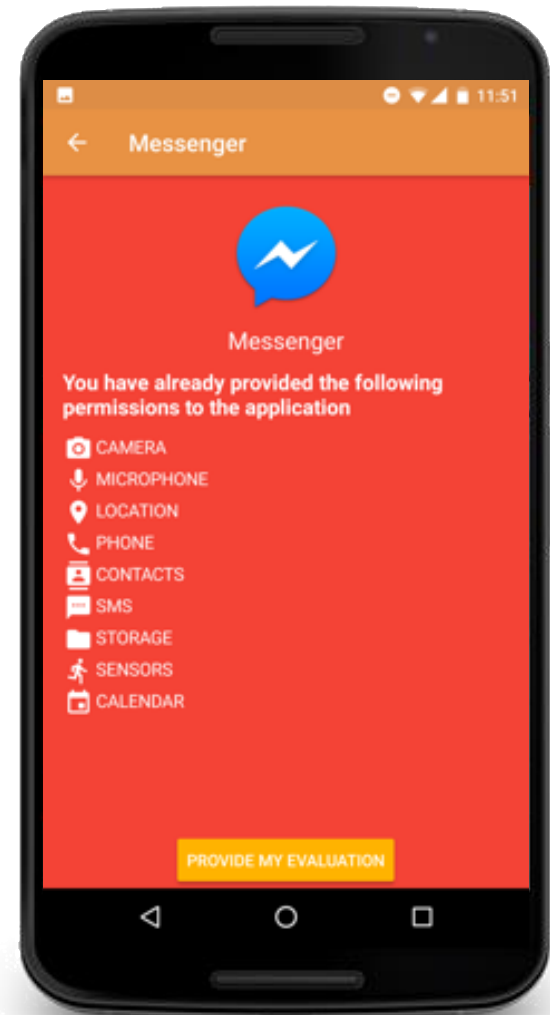




# PF smartphone app

**Step 3:** users can view more information for each application,

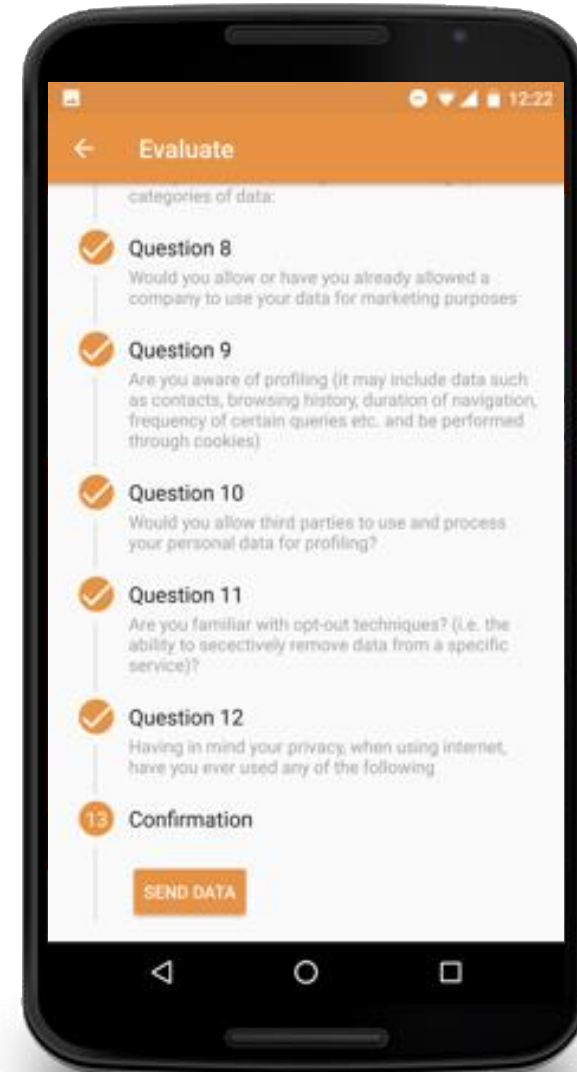
Including permissions given





# PF smartphone app

**Step 4:** users can provide their own evaluation for the specific application

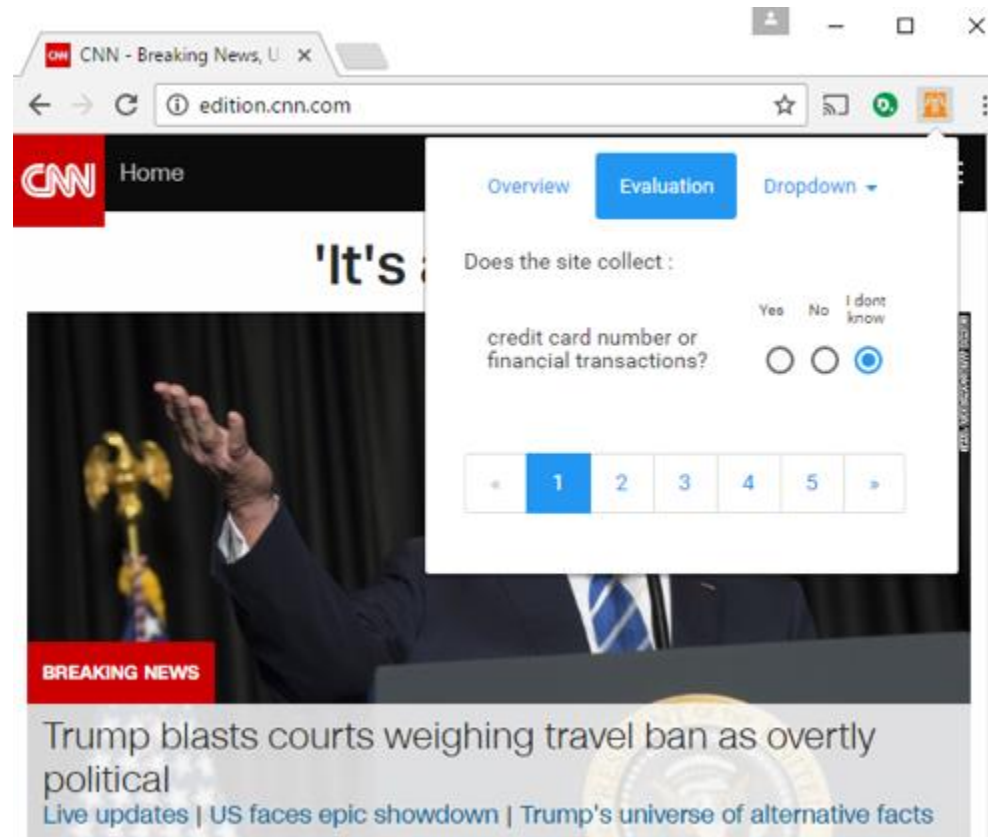




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# PF web browser add-on

- A tool that allows users to get information about potential privacy risks when browsing throughout the Internet.
- The add-on informs users whether a web site is considered safe or not based
  - input gathered by technical enables
  - crowdsourcing data from end users.



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# Implemented list of threats

The evaluation of the website is based on the top 20 threat matrix.

- *Does the website provide data encryption (SSL/TLS)?*
- *What information does the website/server directly learn about a user (using forms)?*
- *Which communication parties is data transferred to?*
- *Does the website use HTML cookies?*
- *Does the website use third party cookies?*
- *Does the website use HTML5 Web SQL database?*



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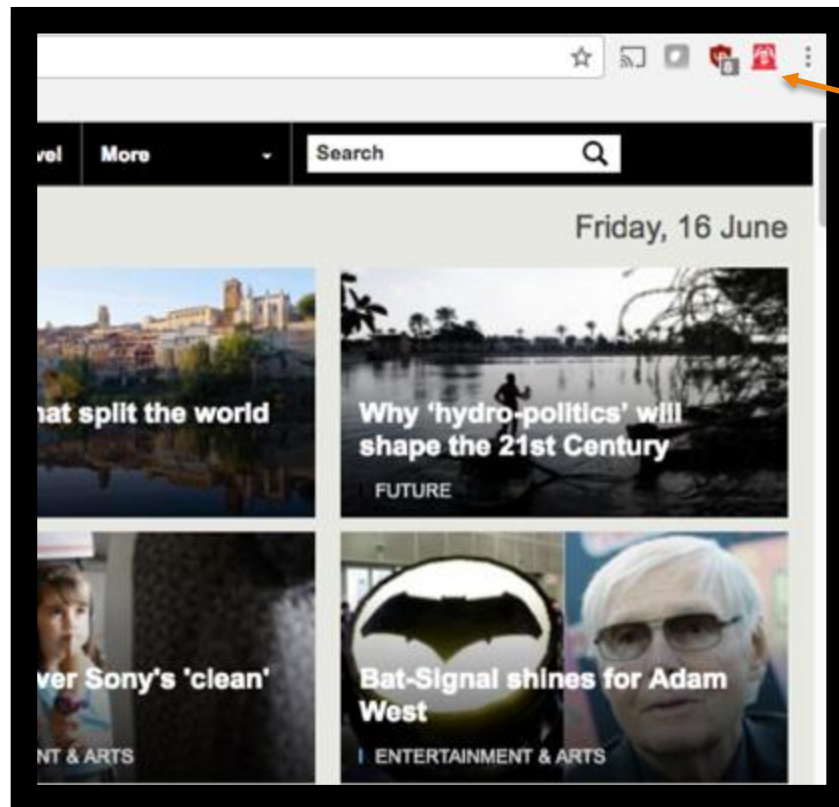


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# PF web browser add-on

**Step 1:** user browses through the internet

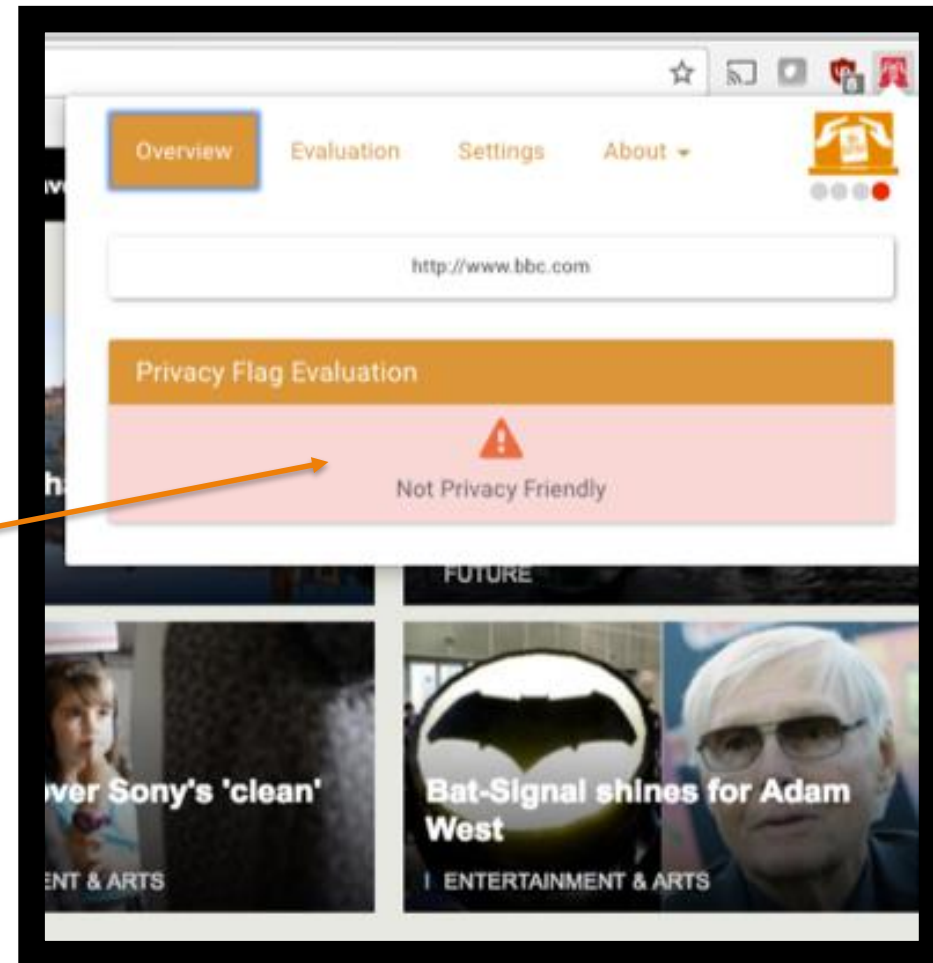


PF flag quickly shows the evaluation of the site



# PF web browser add-on

**Step 2:** user opens the add-on to view more info



Current Evaluation



# PF web browser add-on

## Step 3: user provides his own evaluation

Overview Evaluation Settings About

Is the following data collected? (with or without your consent)

	Yes	No	IDK
Personal data, for example user name, address, email	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Credit card number of financial transactions	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Data from your contacts, calendar, or social network accounts	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

1 2

Overview Evaluation Settings About

Is there clear and understandable information on

	Yes	No	IDK
who is collecting the data	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
what is their contact details	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
the purpose for which the data are collected	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

1 2

SUBMIT

User submits his evaluation



# PF application - IoT

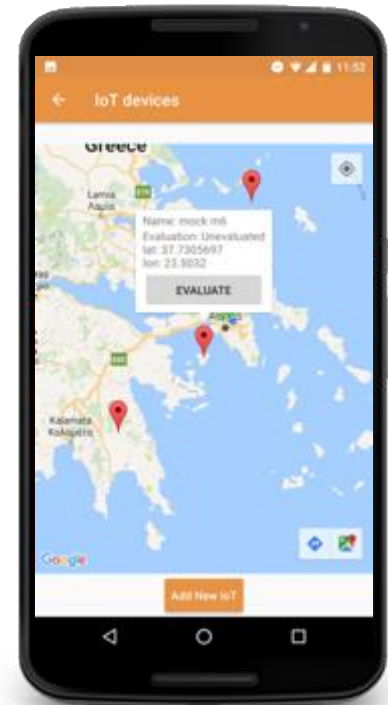
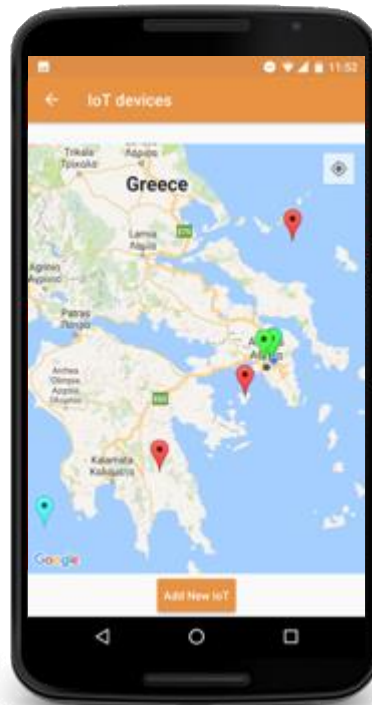
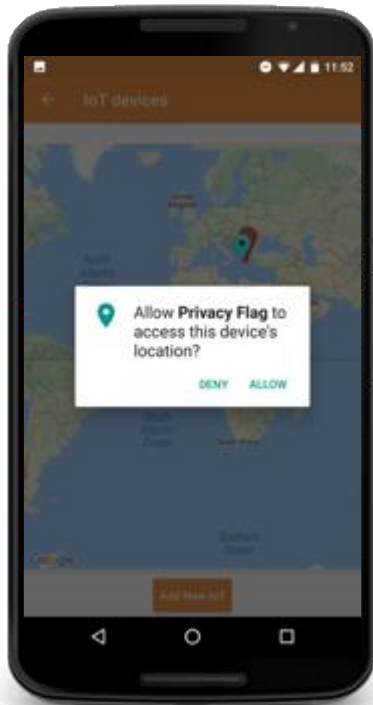
- It allows users to get information on potential privacy risks from installed IoT deployments based on Crowd information
- It allows users to provide their feedback on existing or register a new IoT deployment in the registry





# Registry of all IoT deployments in PF

**Step 1:** view all existing networks based on users location



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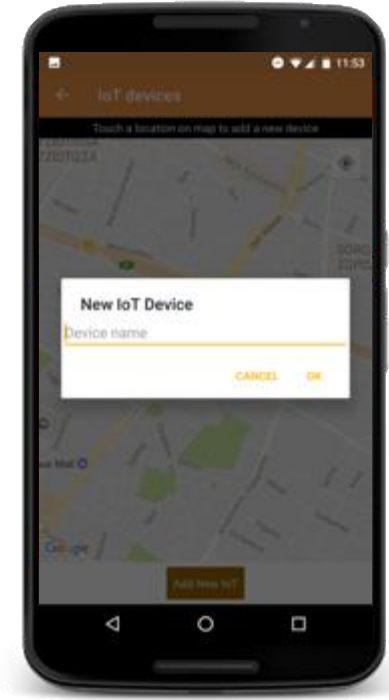
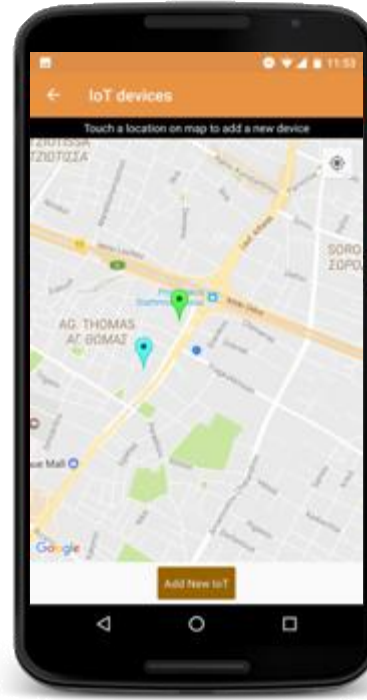
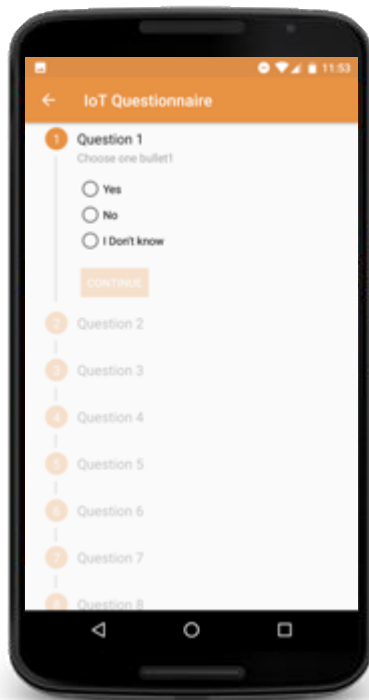


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# Register a new IoT and provide evaluation

**Step 2:** provide user evaluation or register a new IoT device/deployment

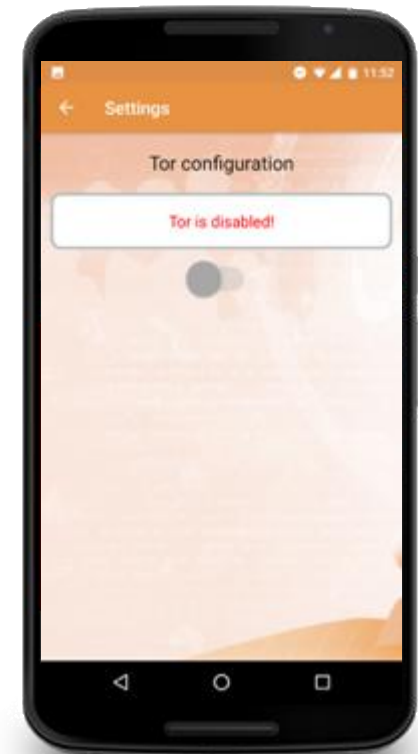
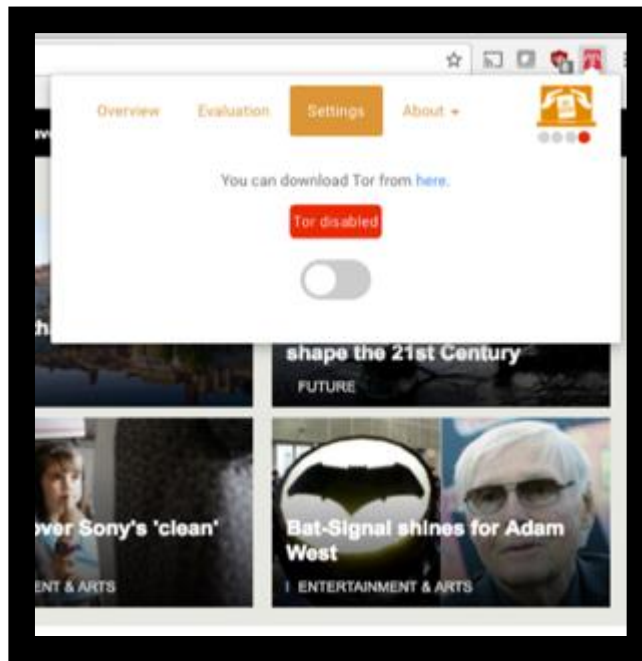




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# A thought on anonymity

All Privacy Flag tools can work over Tor network providing user anonymity



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*Thank you!*



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National and Kapodistrian  
University of Athens



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