



Course material

Course:

## Understanding the digital supply chain and its stakes for humanitarian actors

Video:

### 6.1 Cyber Ops against essential civilian infrastructure and services & human

Concepts (extracted from automatically generated subtitles):

**Overview of humanitarian stakes of cyber operations. Global cyber hub. Humanitarian consequences of cyber operations. Essential services. Cyber operations. Humanitarian crises. Case study. Significant impact. Armed conflicts. Humanitarian organisations. Last week. Next video. Real-world impacts of cyber operations. Impact of a data breach. Functioning of many hospitals.**



[to video sequence search](#)

(within Understanding the digital supply chain and its stakes for humanitarian actors.)



[to video](#)

Center for Digital Education. More educational support material here:

<https://www.epfl.ch/education/educational-initiatives/cede/educational-technologies-gallery/boocs-en/>  
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EPFL  
**EssentialTech**  
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**Digital Trust**

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# HUMANITARIAN CONSEQUENCES OF CYBER OPERATIONS

## Introduction

**Cléa Thouin**

Protection in the Digital Age specialist, ICRC



Hello and welcome.

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# Introduction



My name is Cléa Thouin, and I work for the ICRC's Delegation for Cyberspace and Global Cyber Hub in Luxembourg.

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## summary

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# Introduction



Last week, in your introduction to cybersecurity, Sean Cordy gave you an overview of humanitarian stakes of cyber operations during armed conflicts.

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## summary

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## What is the impact of cyber operations against essential services and humanitarian organizations in times of conflicts?

In this module, we're going to focus more specifically on the humanitarian consequences of cyber operations. There are many ways in which cyber operations can impact people affected by conflict and other humanitarian crises,

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Thanks to Stuxnet, we now live in a world where code can destroy machinery and stop (or start) a war.

### Attack on Iranian nuclear enrichment facility

notes

## summary

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# Notable Cyber Operations



## Stuxnet explained: The first known cyberweapon

Thanks to Stuxnet, we now live in a world where code can destroy machinery and stop (or start) a war.

### 2010 Stuxnet

Attack on Iranian nuclear enrichment facility

### 2015-2016 Ukraine

Operations against Ukrainian power grid

### 2017 WannaCry

Ransomware disrupted UK hospitals

against a nuclear enrichment facility in Iran,

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# Notable Cyber Operations

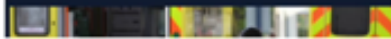


## Stuxnet explained: The first known cyberweapon

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### Why 'WannaCry' Malware Caused Chaos for National Health Service in U.K.

The cyberattack has quickly become another political football in the years-long battle over the future of the NHS.



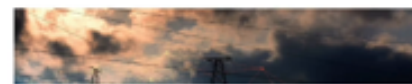
### 'WannaCry' ransomware attack losses could reach \$4 billion

MALWARE ANALYSIS

## BlackEnergy Used as a Cyber Weapon Against Ukrainian Critical Infrastructure

### CRASHOVERRIDE: Analyzing the Malware that Attacks Power Grids

By Dragos, Inc. 06.12.17



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## summary

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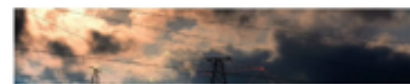
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which disrupted the functioning of many hospitals in the UK, among many other consequences. You'll read more about these and other operations in the case study and additional readings in this module.

## notes

## summary

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# Notable Cyber Operations



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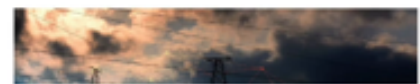
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Although real-world examples of such highly sophisticated operations

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# Notable Cyber Operations



are still relatively rare, there are concerns that cyber operations could increasingly be used

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## Next Video :

# Cyber operations against civilian infrastructure and services



What are essential services?



What makes them vulnerable?



What are the implications for  
affected populations?

to disrupt essential services that people depend on in situations of conflict and other humanitarian crises. In the next video, we'll talk more about what we mean by essential services,

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# Cyber Operations against Humanitarian Organizations



what makes them vulnerable to cyber threats specifically, and what the implications are for affected populations. Cyber operations can also have humanitarian consequences

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# Cyber Operations against Humanitarian Organizations



when they target the organisations that provide assistance and protection in humanitarian settings. Later in the module, we'll talk more about this growing phenomenon,

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# Impact of Cyber vs Kinetic Operations?



and we'll look in more details at the impact of a data breach at the ICRC. As you work through this module, keep in mind that so far, the impacts of cyber operations affecting essential services

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# Impact of Cyber vs Kinetic Operations?



and humanitarian organisations have not been considered significant when compared to the widespread human suffering and physical devastation

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## Tangible impacts of cyber operations beyond cyberspace



caused by kinetic operations that we unfortunately see in many conflicts and humanitarian crises today. However, as we'll see, cyber operations already have tangible consequences beyond cyberspace,

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## Tangible impacts of cyber operations beyond cyberspace



with significant impact on people's lives, safety, and dignity. There's also concern that real-world impacts

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# Cyber Operations against Humanitarian Organizations



of cyber operations could increase as societies continue to digitalize and as threat actors develop more sophisticated cyber tools and methods. It's important for humanitarian organisations to account for cyber threats

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# Cyber Operations against Humanitarian Organizations



if they want to understand the full range of risks that people affected by conflict and humanitarian crises face today, and if they want to safeguard their own ability

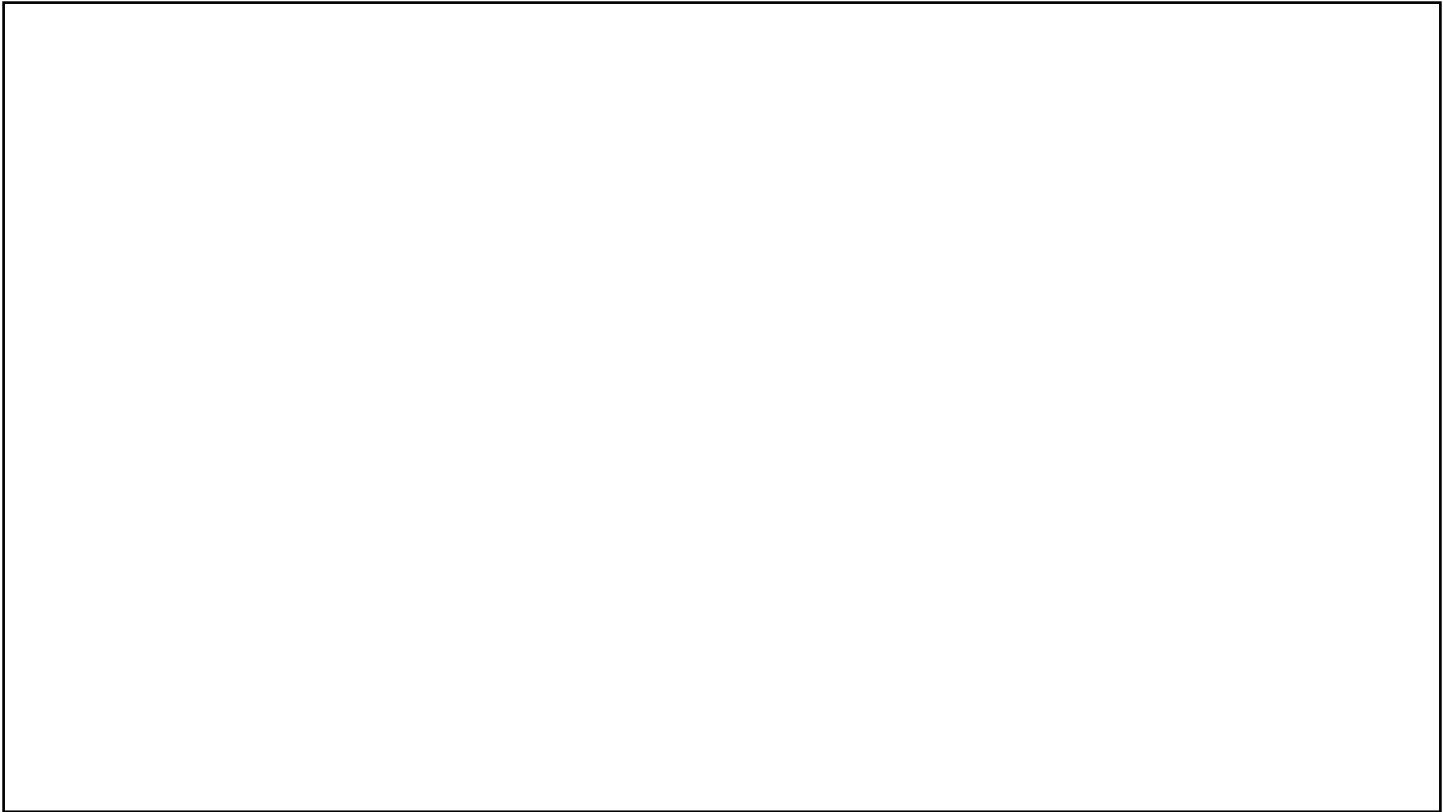
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to protect and assist them. We hope this module helps you as humanitarian professionals to think through some of these risks and the potential responses to prevent them or mitigate their impact.

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