

Course material

Course:

Understanding the digital supply chain and its stakes for humanitarian actors

Video:

2.2.2 Pros and Cons of Satellite, Landline and Mobile Networks

Concepts (extracted from automatically generated subtitles):

Staff safety. Field staff. Local communication shutdown. Satellite connectivity. Higher frequency. Local government. C band. Local infrastructure. Private network. Ka band. International agreement. Satellite communication. Wireless connection. Foreign companies. Link.



[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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CONNECTIVITY: RISKS AND CONSTRAINTS

Pros and Cons of Satellite, Landline and Mobile Networks

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notes

summary

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Satellite Connectivity

Advantages

- Private network
- Reliable
- Secured
- Not censored

Disadvantages

- Regulatory challenges
- Shipping and customs issues
- Starlink-specific: No Service Level Agreement
- Line of sight requirements
- Weather sensitivity

Satellite connectivity includes Visat, Starlink, or BGANs. The pros, it's a private network. Satellite communication remains operational even during local communication shutdown, political unrest, or when local infrastructure is out of services during natural disasters. It is reliable. When staff safety is at stake, it maintains the link from the field staff to the HQ and partners. It's secure. The signal goes straight to the satellite. It makes it hard or close to impossible to intercept. It is not censored. As the link is private, independent from the local government, there is no censorship on the internet traffic. The cons. There is some regulatory challenge. International agreement and spectrum allocation can be complex

notes

summary

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and bring some delays to obtain licence to import and operate. Some countries don't even allow foreign companies to operate satellite communication, like Sudan. Shipping and custom could be a nightmare, cost and time related. For Starlink, there is no service level agreement. The link could be shut down any time, and it's even illegal in some countries, like Chad. All the antenna should have a clear view of the sky where the satellite is positioned.

notes

summary

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In some countries, the azimuth is so low that the signal cannot go straight to the sky. If there is a tree, a building, a truck in the line of sight, the signal can be cut. It is weather sensitive. Some frequency, like Ku and Ka band, will have weather-related disruption

notes

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in case of heavy rain. C band, higher frequency, are not subject to that.

notes

summary

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Optic and DSL Connectivity

Advantages

- Secure
- Stable and reliable
- Affordable

Disadvantages

- Limited availability
- Vulnerable to physical attacks
- Vulnerable to shutdowns
- Possible target for censorship

Fibre optics and DSL connectivities. The pros. It is secure compared to wireless connection, the signal is harder to tap or intercept. It is stable and reliable, less susceptible to weather-related disruption. It is one of the best price to bandwidth ratio. The cons. Availability is limited to urban and well-connected areas. It could be vulnerable as physical fibre routes can be targeted

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Optic and DSL Connectivity

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- Secure
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- Possible target for censorship

for sabotage or espionage. It is serviced by local providers, so it could be shut down by government request, and the traffic could be censored by the local laws.

notes

summary

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Mobile Networks and WiMax

Advantages

- It is easy to deploy
- Easy to move if the team is mobile

Disadvantages

- It is vulnerable to interception
- Jamming and lack of coverage
- Vulnerable to shutdowns
- Possible target for censorship

Mobile networks, 3G, 4G, 5G, and WiMax connectivities. The pros. It is easy to deploy if the coverage is in place.

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Mobile Networks and WiMax

Advantages

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- Easy to move if the team is mobile

Disadvantages

- It is vulnerable to interception
- Jamming and lack of coverage
- Vulnerable to shutdowns
- Possible target for censorship

As it is wireless, it is easy to move if the team is mobile. The cons. It is vulnerable to interception and attacks or shutdown.

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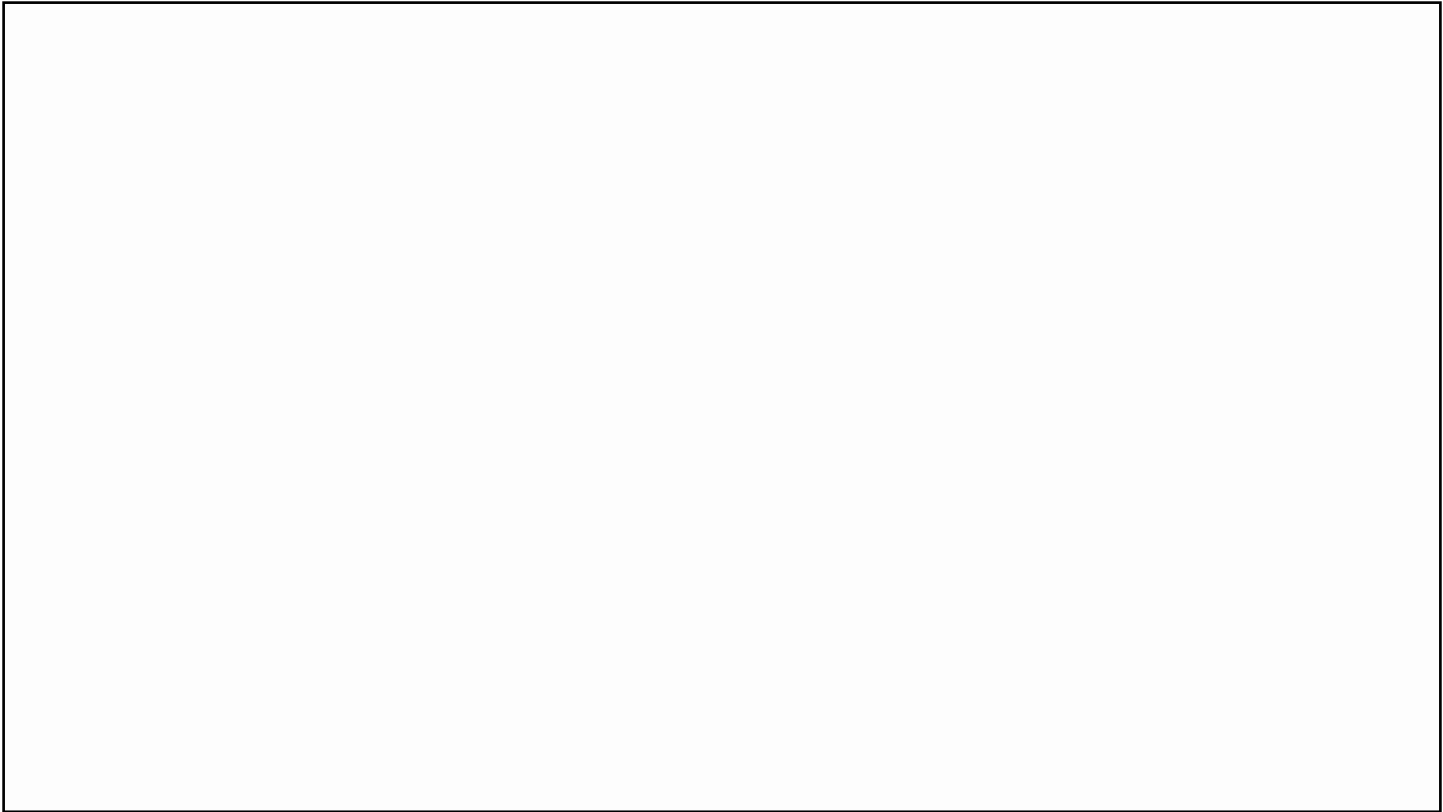
It could be subject to interference, jamming, and lack of coverage. Like the long-line connectivity, it is serviced by local providers, so it could be shutdown by government request,

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and the traffic could be censored by the local laws.

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