

Let's recap some controls for cybersecurity enhancement

- ▶ Keep and maintain all the principles of the CIA triad
 - ▶ Taking in good note the keyspace of the secrets, when applicable
 - ▶ And as the majority of solutions lies on distributed systems, don't forget to apply it to every pipelines that might exist
- ▶ Access control
 - ▶ Physical (Who can access the asset)
 - ▶ Logical (Who can access the systems and data stored in the infrastructure)
- ▶ Secure programming
 - ▶ It is better to get a secure failure than to jeopardize the data
- ▶ Use of cryptography (for sensitive data)
 - ▶ For confidentiality
 - ▶ For integrity
- ▶ Avoid unsecure methods of cryptographic algorithms
- ▶ If and when necessary use methods to assure authenticity and irrefutability
- ▶ Concerning the infrastructure, apply perimeter defense as well as defense in depth, and compartmentation

Let's consider how to apply the concepts

- ▶ Imagine the following scenario
 - ▶ An infrastructure for a health institution
 - ▶ Several sensors and actuators to monitor / act on patients' drug dosages
 - ▶ A server that contains the patients records and applied medications
 - ▶ An infrastructure that allows access from outside the organization
- ▶ What do you propose for cybersecurity?

Let's consider how to apply the concepts

- ▶ Imagine the following scenario
 - ▶ An autonomous driver system in a car
 - ▶ Several sensors to detect obstacles and act accordingly
- ▶ What do you propose for cybersecurity?

Let's consider how to apply the concepts

- ▶ Imagine the following scenario
 - ▶ A country with a dictatorship
 - ▶ A group of citizens (that lives on the country, not abroad) that combat the dictatorship
 - ▶ The government tries to discover the group members in order to eliminate them
 - ▶ The group members needs to contact between each other to exchange information
 - ▶ The group also uses a webserver hosted in a foreign country to publish information about the situation in the country
- ▶ What do you propose for cybersecurity?