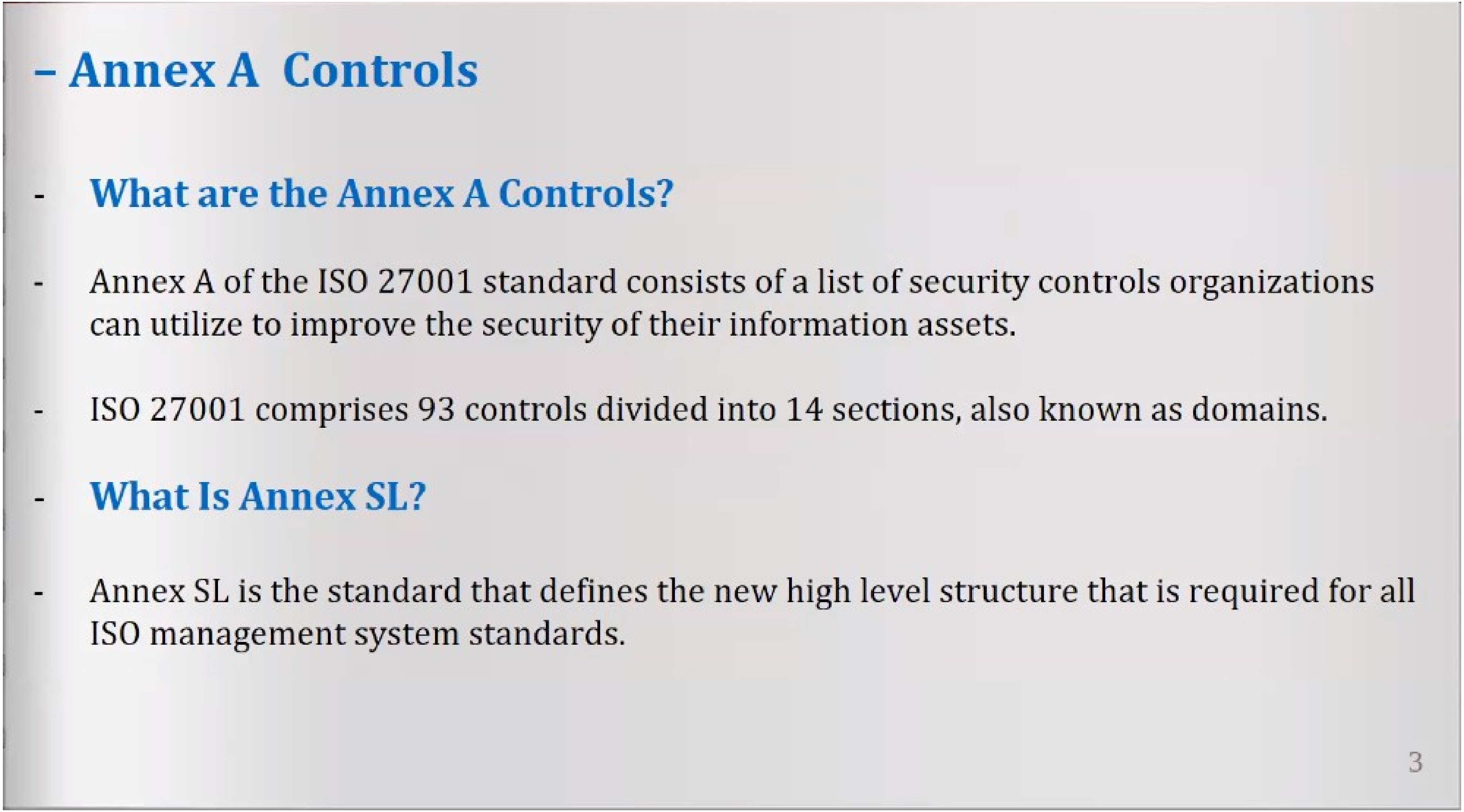
ISO27001:2022
Lec4

Annex A

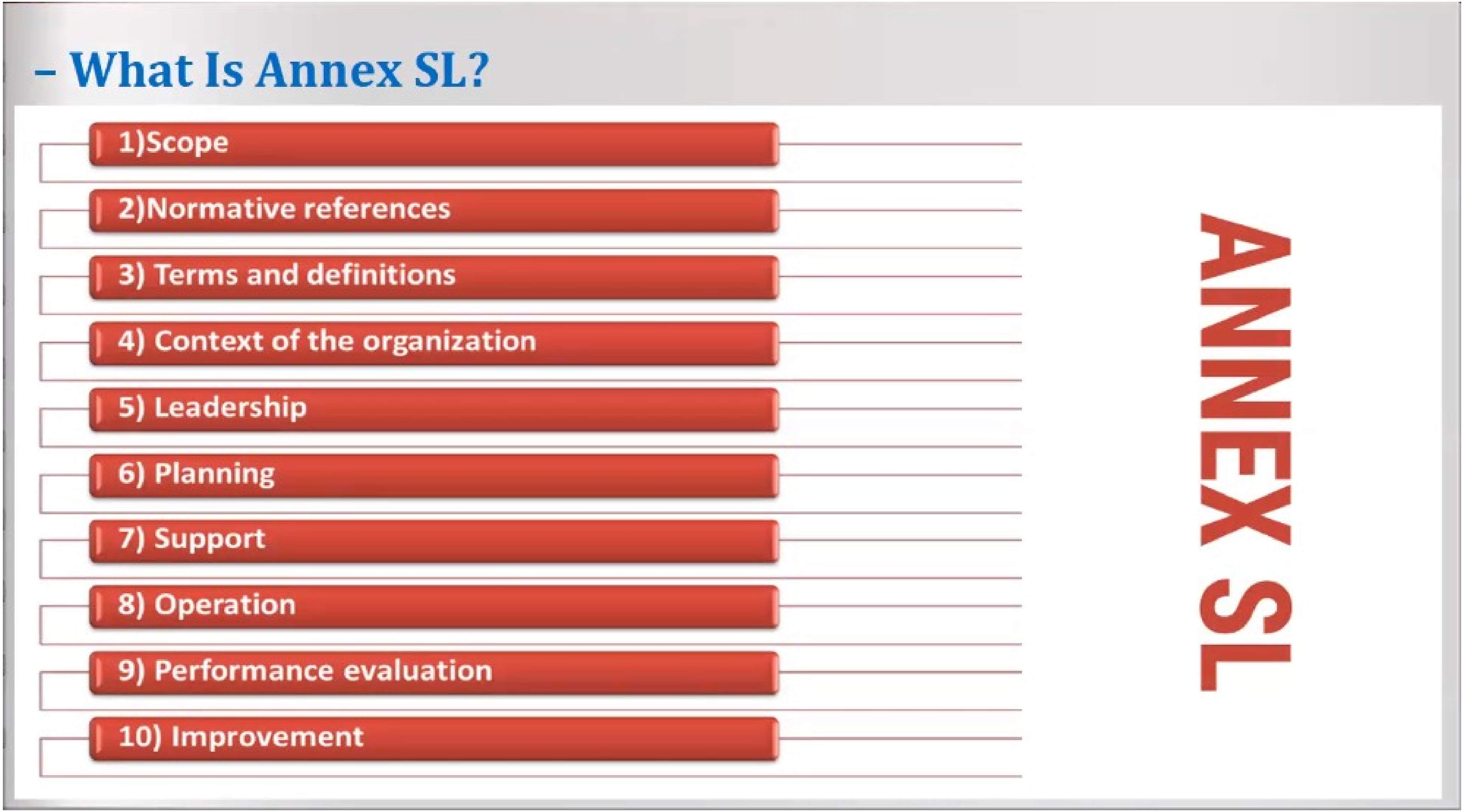
- When working toward certification to ISO/IEC 27001, your organization will select relevant controls to implement from a checklist called Annex A.
- Think of Annex A as a catalog of information. Like a portfolio or archive, Annex A consists of a detailed list of security controls that organizations can use to improve their Information Security Management System (ISMS).

- Objectives and information security controls Listed in ANNEX A (A5 to A18) of ISO27001 are aligned with the security objectives and security controls listed in the pervious clauses.



– Annex A Controls

- **What are the Annex A Controls?**
- Annex A of the ISO 27001 standard consists of a list of security controls organizations can utilize to improve the security of their information assets.
- ISO 27001 comprises 93 controls divided into 14 sections, also known as domains.
- **What Is Annex SL?**
- Annex SL is the standard that defines the new high level structure that is required for all ISO management system standards.



– What Is Annex SL?

1)Scope

2)Normative references

3) Terms and definitions

4) Context of the organization

5) Leadership

6) Planning

7) Support

8) Operation

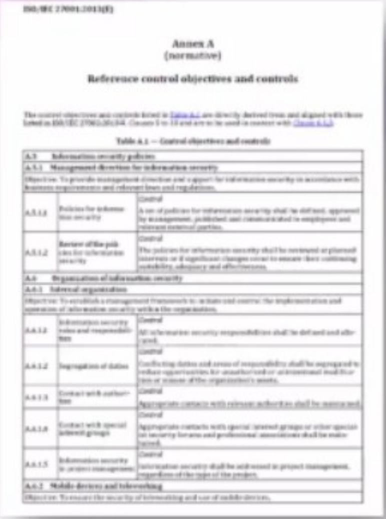
9) Performance evaluation

10) Improvement

ANNEX SL

Annex A contains a list of the security objectives and controls

A.5	Information security policies
A.6	Organization of information security
A.7	Human resource security
A.8	Asset management
A.9	Access control
A.10	Cryptography
A.11	Physical and environmental security
A.12	Operations security
A.13	Communications security
A.14	System acquisition, development and maintenance
A.15	Supplier relationships
A.16	Information security incident management
A.17	Information security aspects of business continuity management
A.18	Compliance



ISO/IEC 27001:2013(E)

Annex A
(normative)

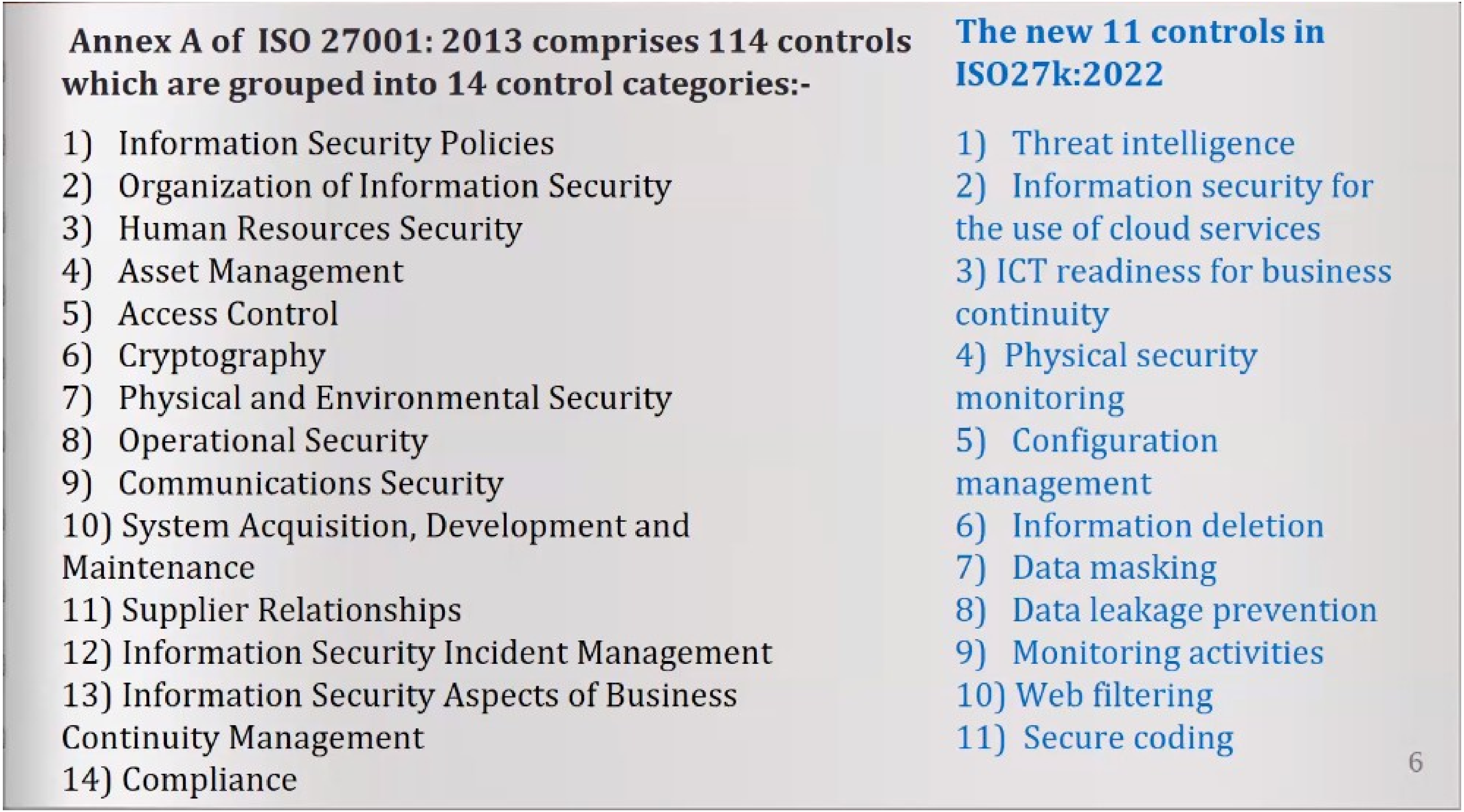
Reference control objectives and controls

[illegible]

Table A.1 — Control objectives and controls

A.5 Information security policies		
A.5.1 Management direction for information security		
Objective: To provide management direction and support for information security in accordance with business requirements and relevant laws and regulations.		
A.5.1.1	Policies for information security	Control [illegible]
A.5.1.2	Review of the policies for information security	Control [illegible]
A.6 Organization of information security		
A.6.1 Internal organization		
Objective: [illegible]		
A.6.1.1	Information security roles and responsibilities	Control [illegible]
A.6.1.2	Segregation of duties	Control [illegible]
A.6.1.3	Contact with authorities	Control [illegible]
A.6.1.4	Contact with special interest groups	Control [illegible]
A.6.1.5	Information security in project management	Control [illegible]
A.6.2 Mobile devices and teleworking		
Objective: To ensure the security of teleworking and use of mobile devices.		

The objectives and the information security controls listed in Annex A (A.5 to A.18) of ISO/IEC 27001 are aligned with the security objectives and security controls listed in the clauses 5 to 18 of ISO/IEC 27002.



Annex A of ISO 27001: 2013 comprises 114 controls which are grouped into 14 control categories:-

1) Information Security Policies
2) Organization of Information Security
3) Human Resources Security
4) Asset Management
5) Access Control
6) Cryptography
7) Physical and Environmental Security
8) Operational Security
9) Communications Security
10) System Acquisition, Development and Maintenance
11) Supplier Relationships
12) Information Security Incident Management
13) Information Security Aspects of Business Continuity Management
14) Compliance

The new 11 controls in ISO27k:2022

1) Threat intelligence
2) Information security for the use of cloud services
3) ICT readiness for business continuity
4) Physical security monitoring
5) Configuration management
6) Information deletion
7) Data masking
8) Data leakage prevention
9) Monitoring activities
10) Web filtering
11) Secure coding

Def#1 - Information and asset

- Information: meaningful data (Printed or handwritten, Recorded, Transmitted by email, Included in a website, Shown on corporate videos, Mentioned during conversations)
- Asset: item, thing or entity that has potential or actual value to an organization.
  - Might include Information, Software, Services, Hardware, People, Reputation (intangible)

In Annex A, the security control A.8 talks about Asset Management

ISO 27001, Annex A.8 Asset Management

A.8.1 Responsibility for assets

Objective: To identify organizational assets and define appropriate protection responsibilities.

A.8.1.1 Inventory of assets

Control: Assets associated with information and information processing facilities shall be identified and an inventory of these assets shall be drawn up and maintained.

A.8.1.2 Ownership of assets

Control: Assets maintained in the inventory shall be owned.

In Annex A, the security control A.8 talks about Asset Management

ISO 27001, Annex A.8 Asset Management

A.8.1.3 Acceptable use of assets

Control: Rules for the acceptable use of information and of assets associated with information and information processing facilities shall be identified, documented and implemented.

A.8.1.4 Return of assets

Control: All employees and external party users shall return all of the organizational assets in their possession upon termination of their employment, contract or agreement.

Def# 2 - Information Security

Preservation of confidentiality, integrity and availability of information.

ISOREC 27002, clause 0.2 How to establish security requirements :

It is essential that an organization identifies its information security requirements. There are three main sources of security requirements:

a. assessing risks to the organization, taking into account the organization's overall business strategy and objectives. Through a risk assessment, threats to assets are identified, vulnerability to and likelihood of occurrence is evaluated and potential impact is estimated;
b. legal, statutory, regulatory and contractual requirements that an organization, its trading partners, contractors and service providers have to satisfy, and their socio-cultural environment;
c. set of principles, objectives and business requirements for information handling, processing, storing, communicating and archiving that an organization has developed to support its operations.

The results of a risk assessment will help guide and determine the appropriate management action and priorities for managing information security risks and for implementing controls selected to protect against these risks.

Def# 2 - Information Security

ISO 27001, Annex A.8 Asset Management

A.8.2- information classification

Objective: To ensure that information receives an appropriate level of protection in accordance with its importance to the organization.

A.8.2.1 Classification of information
Control: Information shall be classified in terms of legal requirements, value, criticality and sensitivity to unauthorised disclosure or modification.

A.8.2.2 Labelling of information
Control: An appropriate set of procedures for information labelling shall be developed and implemented in accordance with the information classification scheme adopted by the organization.

A.8.2.3 Handling of assets
Control: Procedures for handling assets shall be developed and implemented in accordance with the information classification scheme adopted by the organization.

Def# 3 - CIA - Confidentiality, Integrity and Availability

Confidentiality means Property that information is not made available or disclosed to unauthorized individuals, entities, or processes.

Example of ensuring Confidentiality : 1- Encryption 2-Access mechanisms (username + passwords) 3-lockers

Integrity means Property of accuracy and completeness.

Example of ensuring Integrity : 1- File integrity monitoring 2- Data validation 3-peer review

Availability means Property of being accessible and usable upon demand by an authorized entity.

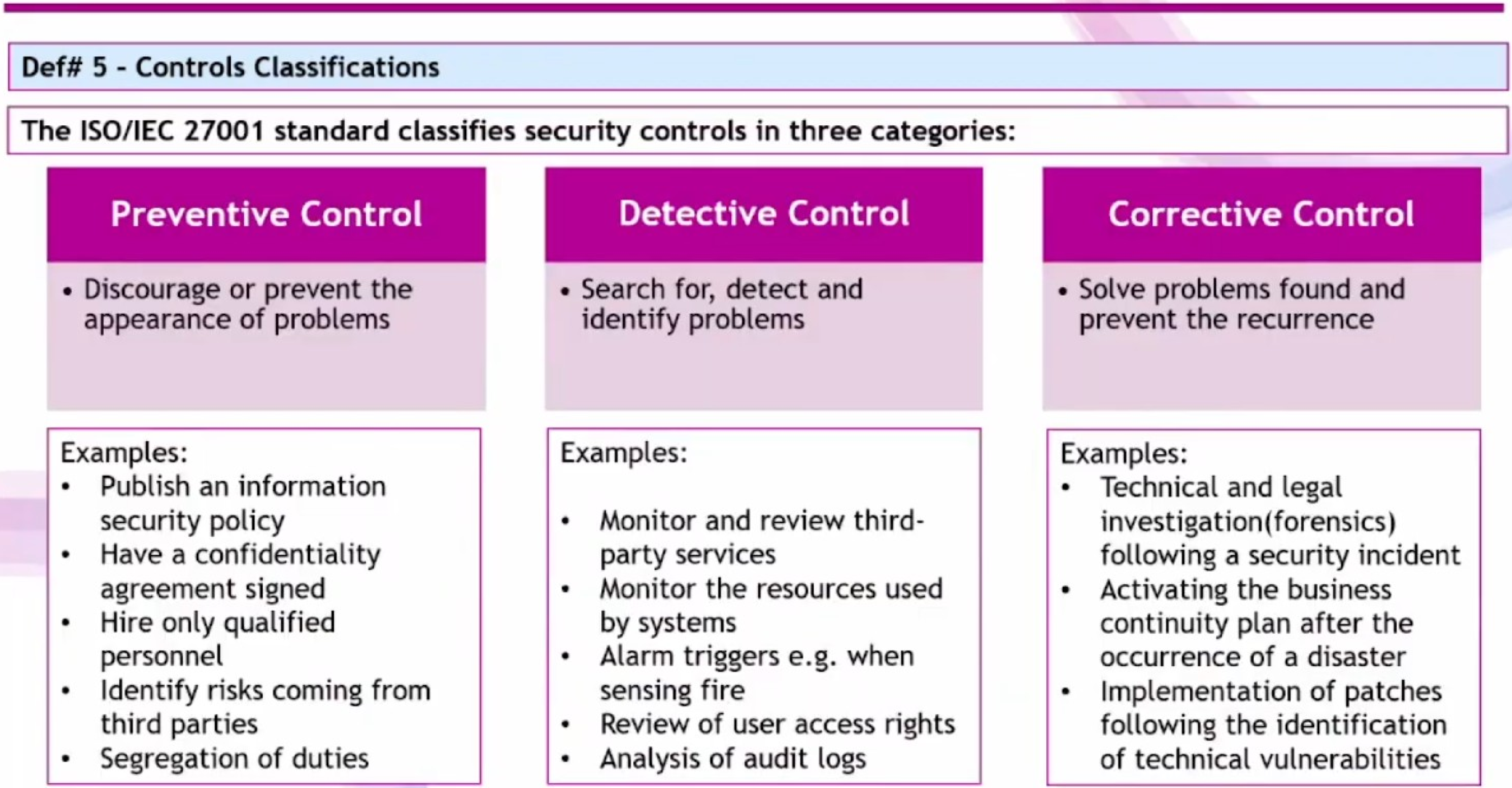
Example of ensuring Availability : 1- Backup 2- Business Continuity 3-High availability solutions

Def# 4 - Control and Control Objective

- A **Control** is a measure that is modifying risk
- **Control** include any process, policy, device, practice, or other actions which modify risk.
- Synonym for **control** include: measure, counter-measure, security device, etc ..

- A **Control Objective** is Statement describing what is to be achieved as a result of implementing controls

- Technical control: Controls related to the use of technical measures or technologies such as firewalls, alarm systems, surveillance cameras, intrusion detection systems (IDS), etc.
- Administrative control: Controls related to organizational structure such as segregation of duties, job rotations, job descriptions, approval processes, etc.
- Managerial controls: Controls related to the management of personnel, including training and coaching of employees, management reviews and audits.
- Legal control: Controls related to the applications of a legislation, regulatory requirements or contractual obligations.



Def# 5 - Controls Classifications

The ISO/IEC 27001 standard classifies security controls in three categories:

Preventive Control

- Discourage or prevent the appearance of problems

Examples:
- Publish an information security policy
- Have a confidentiality agreement signed
- Hire only qualified personnel
- Identify risks coming from third parties
- Segregation of duties

Detective Control

- Search for, detect and identify problems

Examples:

- Monitor and review third-party services
- Monitor the resources used by systems
- Alarm triggers e.g. when sensing fire
- Review of user access rights
- Analysis of audit logs

Corrective Control

- Solve problems found and prevent the recurrence

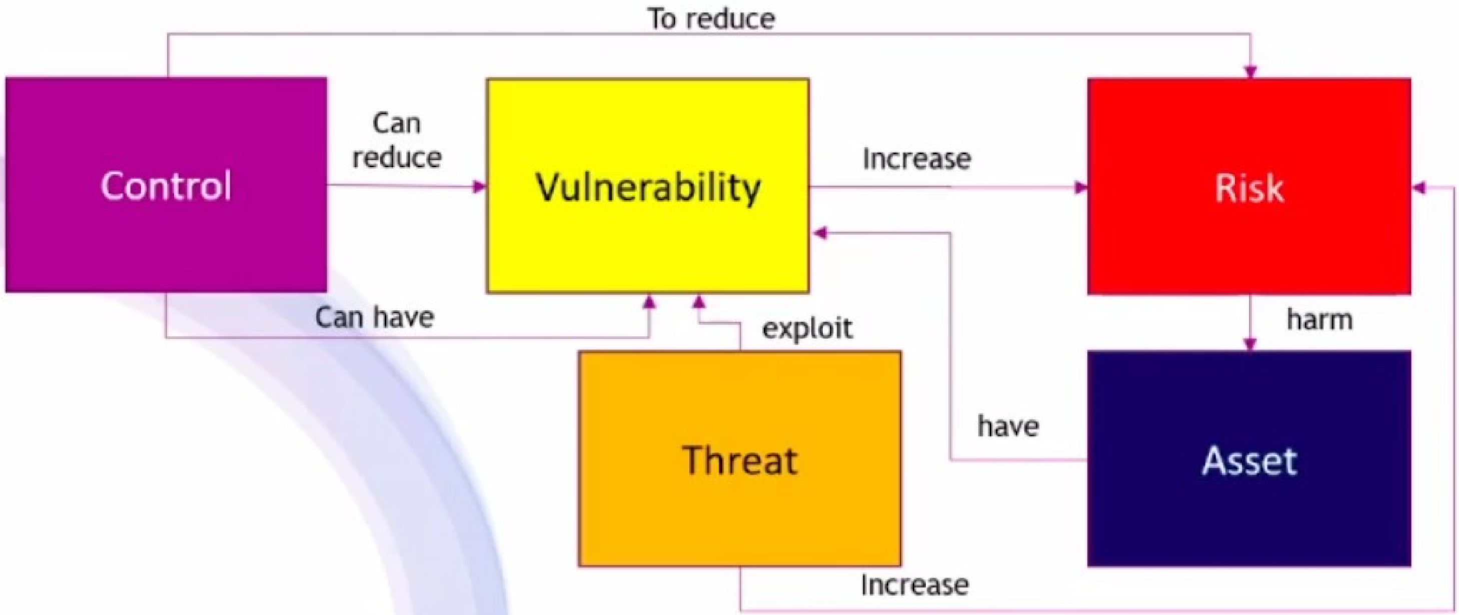
Examples:
- Technical and legal investigation(forensics) following a security incident
- Activating the business continuity plan after the occurrence of a disaster
- Implementation of patches following the identification of technical vulnerabilities

Relationships Between Information Security Elements

1. Assets and controls can present vulnerabilities that can be exploited by threats.

2. It is the combination of threats and vulnerabilities that can increase the potential effect of the risk.

3. Controls allow the reduction of vulnerabilities. An organization has few alternatives to act against threats. For example, controls can be implemented to provide protection against system intrusions, but it is difficult for an organization to take action to reduce the number of hackers on the internet.



A.5 - Information Security Policies – ISO27k:2013

- The objective of this category is to provide management direction and support for information security in line with the organization's requirements and relevant regulations.

- This is achieved by documenting a set of information security policies, which must be approved, published, communicated and reviewed, at planned intervals.

A.5.7) Threat intelligence – ISO27k:2022
A.5.23) Information security for use of cloud services – ISO27k:2022
A.5.30) ICT readiness for business continuity – ISO27k:2022

A.5 Information security policies

A.5.1 Management direction for information security

Objective: To provide management direction and support for information security in accordance with business requirements and relevant laws and regulations.

A.5.1.1 Policies for information security

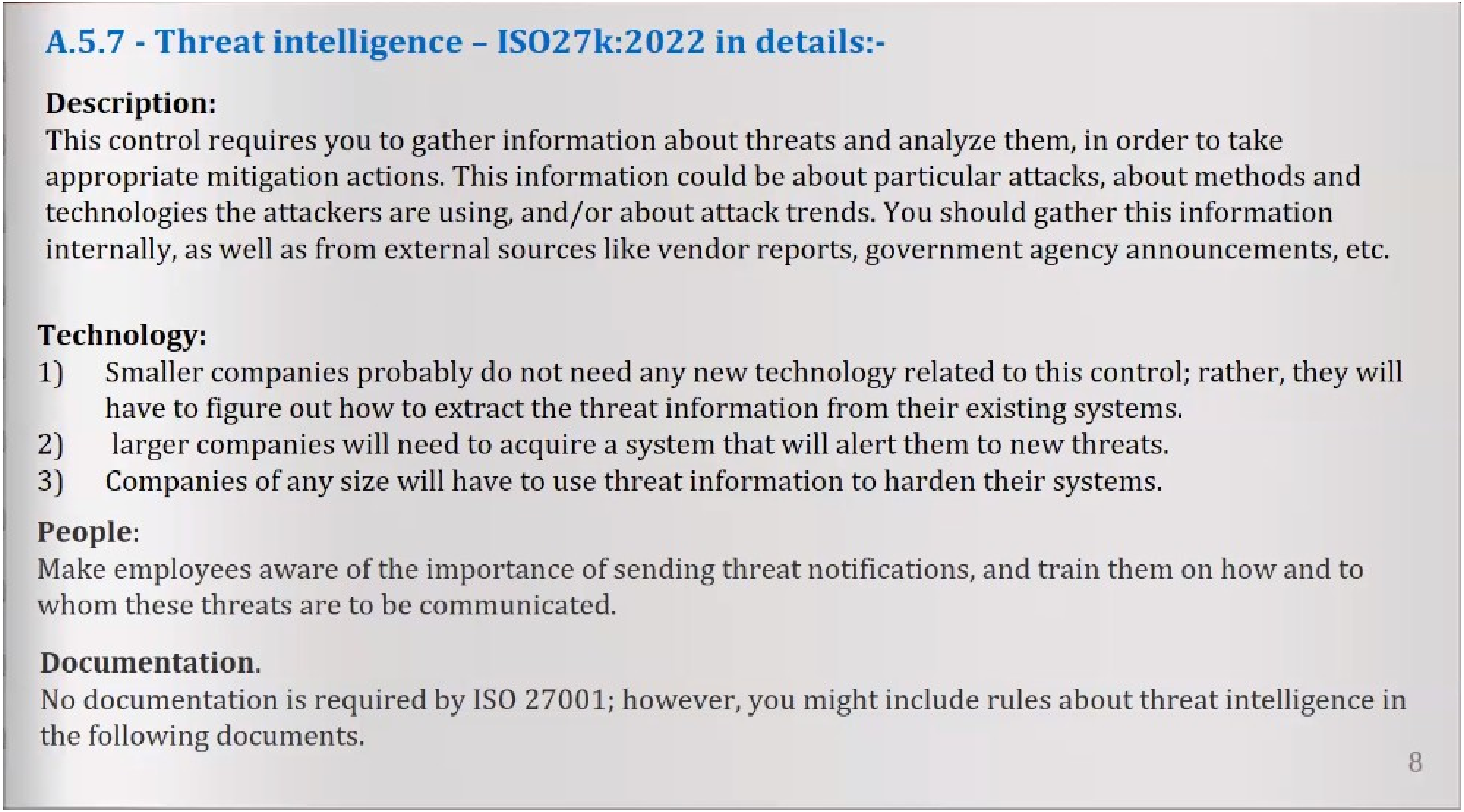
Control

A set of policies for information security shall be defined, approved by management, published and communicated to employees and relevant external parties.

A.5.1.2 Review of the policies for information security

Control

The policies for information security shall be reviewed at planned intervals or if significant changes occur to ensure their continuing suitability, adequacy and effectiveness.



A.5.7 - Threat intelligence – ISO27k:2022 in details:-

Description:

This control requires you to gather information about threats and analyze them, in order to take appropriate mitigation actions. This information could be about particular attacks, about methods and technologies the attackers are using, and/or about attack trends. You should gather this information internally, as well as from external sources like vendor reports, government agency announcements, etc.

Technology:

1) Smaller companies probably do not need any new technology related to this control; rather, they will have to figure out how to extract the threat information from their existing systems.
2) larger companies will need to acquire a system that will alert them to new threats.
3) Companies of any size will have to use threat information to harden their systems.

People:

Make employees aware of the importance of sending threat notifications, and train them on how and to whom these threats are to be communicated.

Documentation.

No documentation is required by ISO 27001; however, you might include rules about threat intelligence in the following documents.

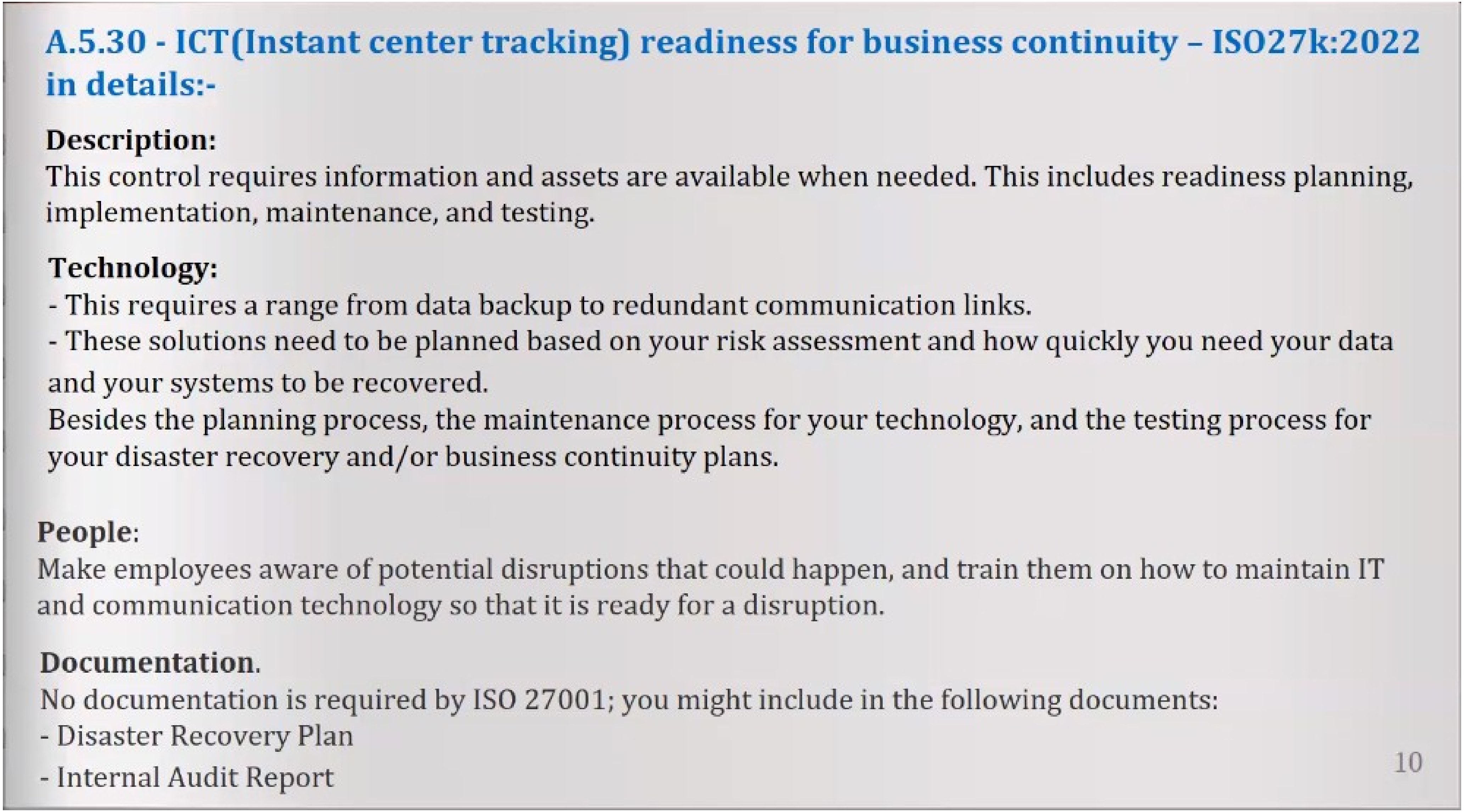
A.5.23 - Information security for use of cloud services – ISO27k:2022 in details:-

Description:
This control requires you to set security requirements **(Policies)** for cloud services in order to have better protection of your information in the cloud. This includes purchasing, using, managing, and terminating the use of cloud services.

Technology:
1) In most cases, new technology will not be needed, because the majority of cloud services already have security features.
2) In some cases, you might need to upgrade your service to a more secure one, while in some rare cases you will need to change the cloud provider if it does not have security features. For the most part, the only change required will be using existing cloud security features in a more thorough way.

People:
Make employees aware of the security risks of using cloud services, and train them on how to use the security features of cloud services.

Documentation.
No documentation is required by ISO 27001; however, if you are a smaller company, you might include rules about cloud services in the Supplier Security Policy.
Larger companies might develop a separate policy that would focus specifically on security for cloud services.



A.5.30 - ICT(Instant center tracking) readiness for business continuity – ISO27k:2022 in details:-

Description:
This control requires information and assets are available when needed. This includes readiness planning, implementation, maintenance, and testing.

Technology:
- This requires a range from data backup to redundant communication links.
- These solutions need to be planned based on your risk assessment and how quickly you need your data and your systems to be recovered.

Besides the planning process, the maintenance process for your technology, and the testing process for your disaster recovery and/or business continuity plans.

People:
Make employees aware of potential disruptions that could happen, and train them on how to maintain IT and communication technology so that it is ready for a disruption.

Documentation.
No documentation is required by ISO 27001; you might include in the following documents:
- Disaster Recovery Plan
- Internal Audit Report

A.6 – Organization of Information Security– ISO27k:2013

- The first objective:-

- Information security roles and responsibilities are understood.
- Segregation of duties is understood.
- Information security in project management **(Scope of ISMS)** is established and managed, regardless of the type of project.
- The second objective is to ensure the security of remote working and the use of mobile devices.

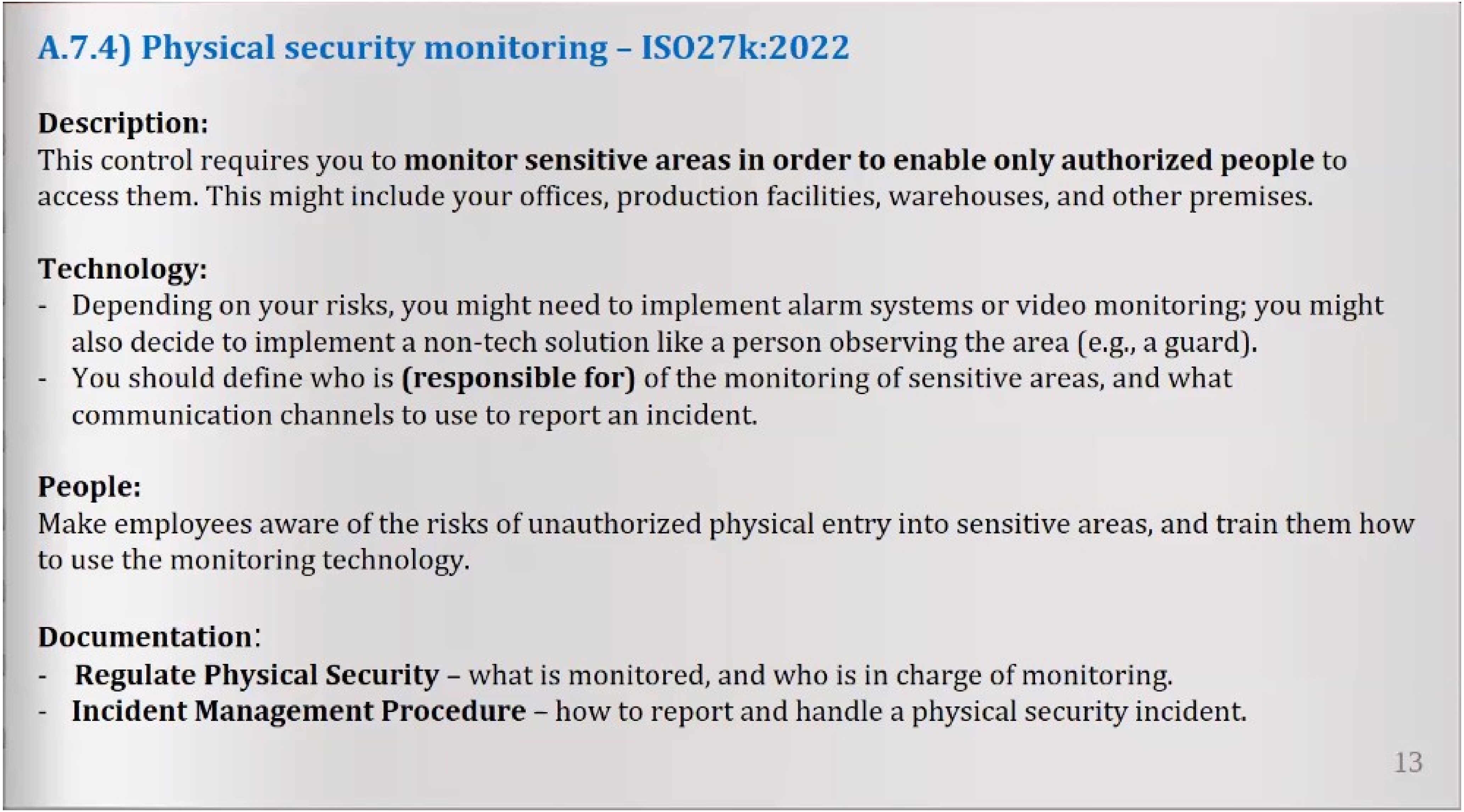
- The second objective

- ensure the security of remote working and the use of mobile devices.

A.7 - Human Resources Security – ISO27k:2013

- **pre-employment requirements**, ensuring that individuals understand their responsibilities and are suitable for the roles they are being considered for.
- **Non-disclosure agreement.**
- The organization must ensure that **individuals receive appropriate training.**
- **Formal discipline process**

A.7.4) Physical security monitoring – ISO27k:2022



A.7.4) Physical security monitoring – ISO27k:2022

Description:
This control requires you to **monitor sensitive areas in order to enable only authorized people** to access them. This might include your offices, production facilities, warehouses, and other premises.

Technology:

- Depending on your risks, you might need to implement alarm systems or video monitoring; you might also decide to implement a non-tech solution like a person observing the area (e.g., a guard).
- You should define who is **(responsible for)** of the monitoring of sensitive areas, and what communication channels to use to report an incident.

People:
Make employees aware of the risks of unauthorized physical entry into sensitive areas, and train them how to use the monitoring technology.

Documentation:

- **Regulate Physical Security** – what is monitored, and who is in charge of monitoring.
- **Incident Management Procedure** – how to report and handle a physical security incident.

THANKS!