



# **Risk Management**

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**Workshop on the Development of Business Case  
for the Implementation of CNS/ATM Systems  
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# Outline

- **Risk management**
  - **Definition**
  - **Objectives**
- **Risk analysis**
- **Risk evaluation**
- **Development of mitigation plans**



# **Risk Management**



# What is risk?

- Risk can be defined as the likelihood of occurrence of an undesirable event combined to the magnitude of its impact



# What is risk management?

- Risk analysis
  - Identification of risks
  - Estimation of their likelihood of occurrence
  - Estimation of their causes and the magnitude of their potential impact
- Risk evaluation
- Development of risk mitigation plans



# Objectives of risk management

- Not to eliminate risks
- But, to identify them and minimize their effects through:
  - improved awareness of their likelihood of occurrence and potential impact and;
  - development and implementation of appropriate mitigation plans



# ***Risk Analysis***



# **Risks for the implementation of CNS/ATM systems ...**

- **technical**
- **operational**
- **political**
- **economic**
- **financial**
- **managerial**



# **Risks for the implementation of CNS/ATM systems**

- **Exchange rates**
- **Schedule, extended transition**
- **Traffic growth**
- **Rate of return**
- **Efficiency rates**
- **Systems integration failure**
- **Resistance to change**



# **Estimation of the likelihood of occurrence**

- **Expert interview**
- **Analogy**
- **Review of implementation plans**
- **Delphi technique**



# **Estimation of the potential impact**

- **Expert interview**
- **Analogy**
- **Review of implementation plans**
- **Delphi technique**



# **Risk Evaluation**



# **Risk evaluation**

- **Assign a risk score to each risk**
- **Assign a weight to each risk**
- **Determine a risk score for each implementation option**



# **Development of mitigation plans**



# **Development of mitigation plans**

- **Identification of potential causes**
- **Development of mitigation plans**

