

MERKEZİ KAYIT KURULUŞU (MKK)

CENTRAL SECURITIES DEPOSITORY
& TRADE REPOSITORY OF TÜRKİYE

RISK MANAGEMENT, BUSINESS CONTINUITY
AND ADAPTATION TO NEW CHALLENGES

December 2024



**MERKEZİ KAYIT
İSTANBUL**
Central Securities Depository
& Trade Repository of Türkiye

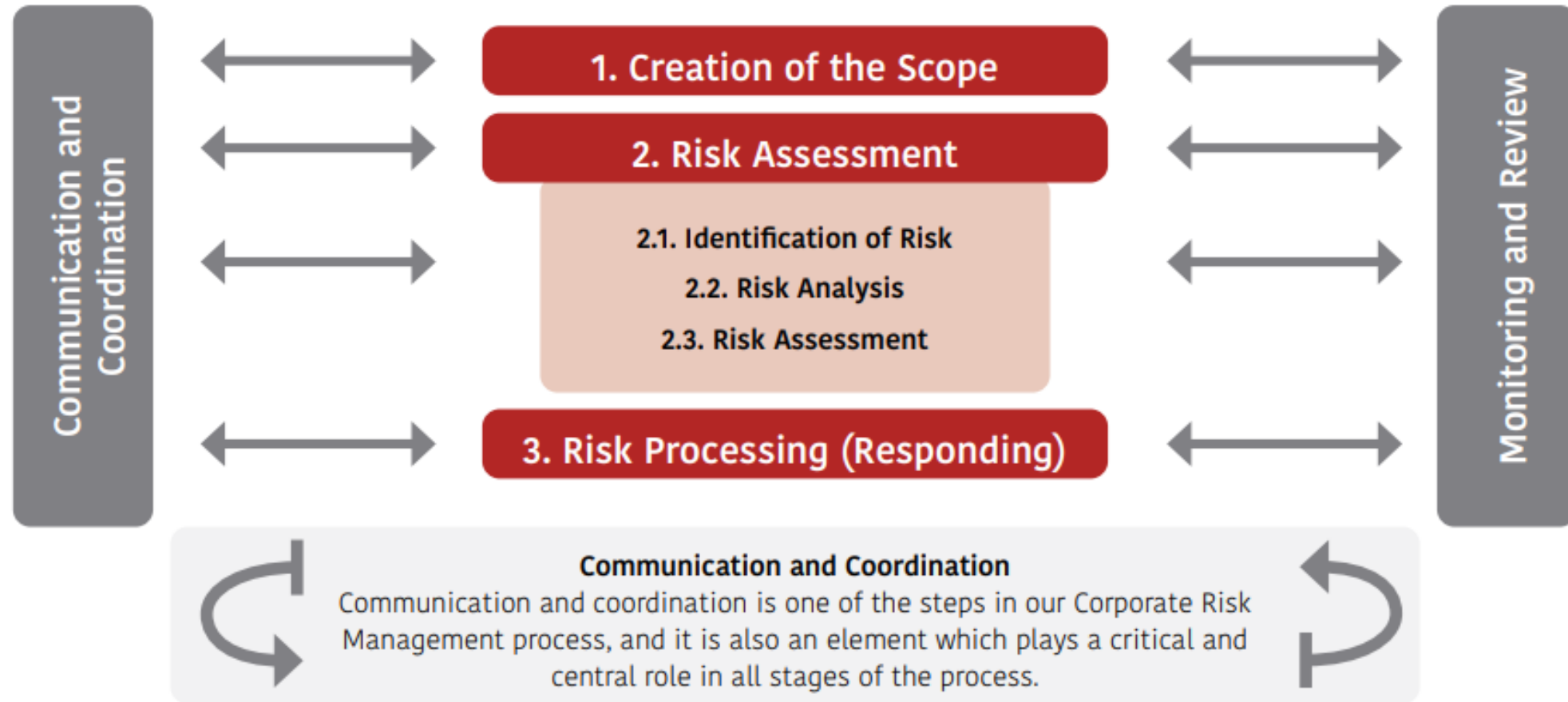
AGENDA

- Important Standards and Principles
- Risk Management Process
- Risk Categories
- Risks and Opportunities
- Risk Responding Strategies
- Risks and Controls Structure
- Heatmap
- Key Risk Indicators
- Establishment of BCMS Scope
- BCMS Policy
- BCMS Strategies and Objectives
- MKK BCMS Organization
- Management Involvement & Leadership
- BCMS Communication Plan
- Business Impact Analysis
- BCP Tests and Exercises
- Emerging Challenges and Adaptation

IMPORTANT STANDARTS AND PRINCIPLES

- ISO 31000 ERM
- IIA 3 Lines Model
- CPMI-IOSCO Principles for Financial Market Infrastructures
- COSO ERM Framework and Internal Control Framework
- ISO 27001 ISMS
- ISO 22301 BCMS
- ISO 20000-1 ITSMS
- ISO 9001 QMS
- COBIT

RISK MANAGEMENT PROCESS



► RISK CATEGORIES

In MKK, risk categories are classified in accordance with the Principles for Financial Market Infrastructures (CPMI-IOSCO).



RISKS AND OPPORTUNITIES

MKK ENTERPRISE RISK MANAGEMENT

Risks and opportunities are addressed and managed within MKK Enterprise Risk Management Structure.

Risks are identified, analyzed and evaluated in terms of impact and the probability:

- *Financial, reputation, compliance and operational impact criteria for business risks*
- *Confidentiality, availability and integrity impact criteria for IT risks*

MKK Risk Appetite has been determined and approved by BoDs.

For the residual risks that are above the MKK risk appetite, risk mitigating action plans are determined.

Risk assessments are yearly reported to the BoDs, Early Detection of Risks Committee (EDRC) and Top Management. Risk reviews are quarterly reported to EDRC and Top Management.

► RISK RESPONDING STRATEGIES

Risk Assessment

Risk Assessment	Determination of Risk Response Strategies	Risk Avoidance	Risk Acceptance	Risk Mitigation	Risk Transfer
		Hedging by avoiding risk related activity	Taking the risk and not taking action	Taking action to mitigate risks	Transfer of risk to third parties through the utilization of insurance mechanisms and the practice of outsourcing

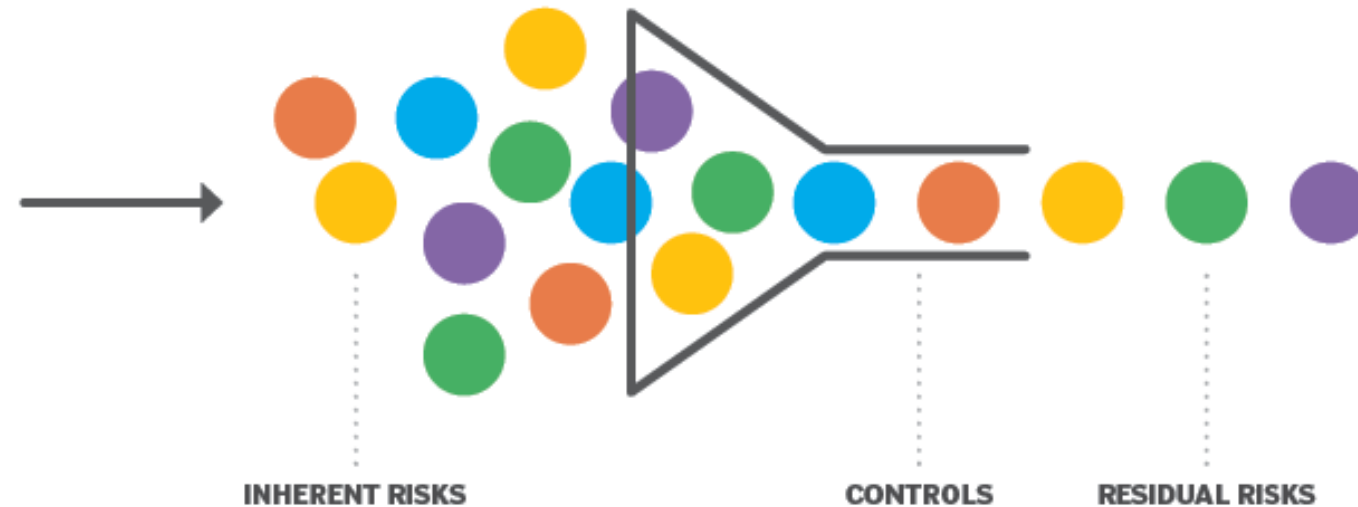
Evaluation of Opportunities

Evaluation of Opportunities	Identifying Strategies for Responding to Opportunities	Exploiting	Maintaining	Enhancing	Sharing
		Leveraging the opportunity	Deliberately refraining from pursuing the opportunity	Implementing strategies to ensure the opportunity is fully leveraged	Sharing the benefits of the opportunity through the distribution of costs.



► RISKS AND CONTROLS STRUCTURE

Inherent risk vs. residual risk



Residual risk is the risk remaining after efforts have been made to reduce the inherent risk.

► HEATMAP

Risk Management Matrix		Impact				
		Neglibile	Marginal	Moderate	Critical	Catastrophic
Probability	Almost Certain	Low Risk	Moderate Risk	High Risk	Extreme Risk	Extreme Risk
	Likely	Minimum Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk
	Possible	Minimum Risk	Low Risk	Moderate Risk	High Risk	High Risk
	Unlikely	Minimum Risk	Low Risk	Low Risk	Moderate Risk	High Risk
	Rare	Minimum Risk	Minimum Risk	Low Risk	Moderate Risk	High Risk

► KEY RISK INDICATORS

Key Risk Indicators

Acquisition of Information

Development of Effective KRIs

Aligning with Risks and Strategic Goals

Systematic Monitoring and Reporting

Raising Awareness

Stakeholder Participation, Communication and Coordination

Regular Review

- ✓ **Meaningful**
- ✓ **Measurable**
- ✓ **Early Warning Signal**
- ✓ **Auditable**
- ✓ **Comparable**



-  Risk Mitigating Action
-  Close Monitoring
-  Acceptable Risk

ESTABLISHMENT OF BCMS SCOPE



▶ *After understanding context of the organization, BCMS scope has been established.*

MKK BCMS SCOPE

MKK's all services provided in MKK's facility, Borsa İstanbul Data Center (PDC), Disaster Recovery Center (DRC), Disaster Recovery Operation Center (DROC) are within the scope of the Business Continuity Management System (BCMS).

- *Central Securities Depository System (MKS)*
- *Electronic Warehouse Receipt Center (e-ÜRÜN)*
- *Public Disclosure Platform (KAP)*
- *Electronic Trade Repository (e-VEDO)*
- *Electronic General Meeting (e-GENEL KURUL)*
- *Companies Information Portal (e-ŞİRKET)*
- *Electronic Board of Directors (e-YKS)*
- *Investor Information Center (e-YATIRIMCI)*
- *Investor Notification Service (YBS)*
- *Investor Risk Monitoring System (YRTS)*
- *Capital Markets Data Bank (e-VERİ)*
- *Data Analysis Platform (VAP)*
- *Crowdfunding Platform (KFS)*
- *Bearer Shares Registry System (HPKS)*
- *MKK Communication Center (MİM)*
- *Real Estate Based And Developing Financial Instruments Information System (GEFAS)*
- *Financial Registration System (FTS)*
- *MİM360 MKK Communication Center (MİM360)*

All business and information technology processes related to infrastructure and operation support provided to MKK Gayrimenkul Bilgi Merkezi A.Ş. (GABİM), legal regulations that have to be followed and support infrastructure are within the scope of the Business Continuity Management System (BCMS).

MKK Business Continuity Management System Policy

The first priority of our organization is to ensure the life safety of employees and guests in case of crisis or events that will prevent the MKK from achieving its corporate objectives.

Once the life safety of the employees and guests is guaranteed, the critical services of MKK are aimed to continue as planned, recovered and returned to normal condition.

BCMS STRATEGIES AND OBJECTIVES

Main principle in creating BCMS strategies is the reactivation of critical services after the incident.

Critical employees are identified and backed up.

The Disaster Recovery Center, configured as a hot site, is located around 400 km away from the primary site.

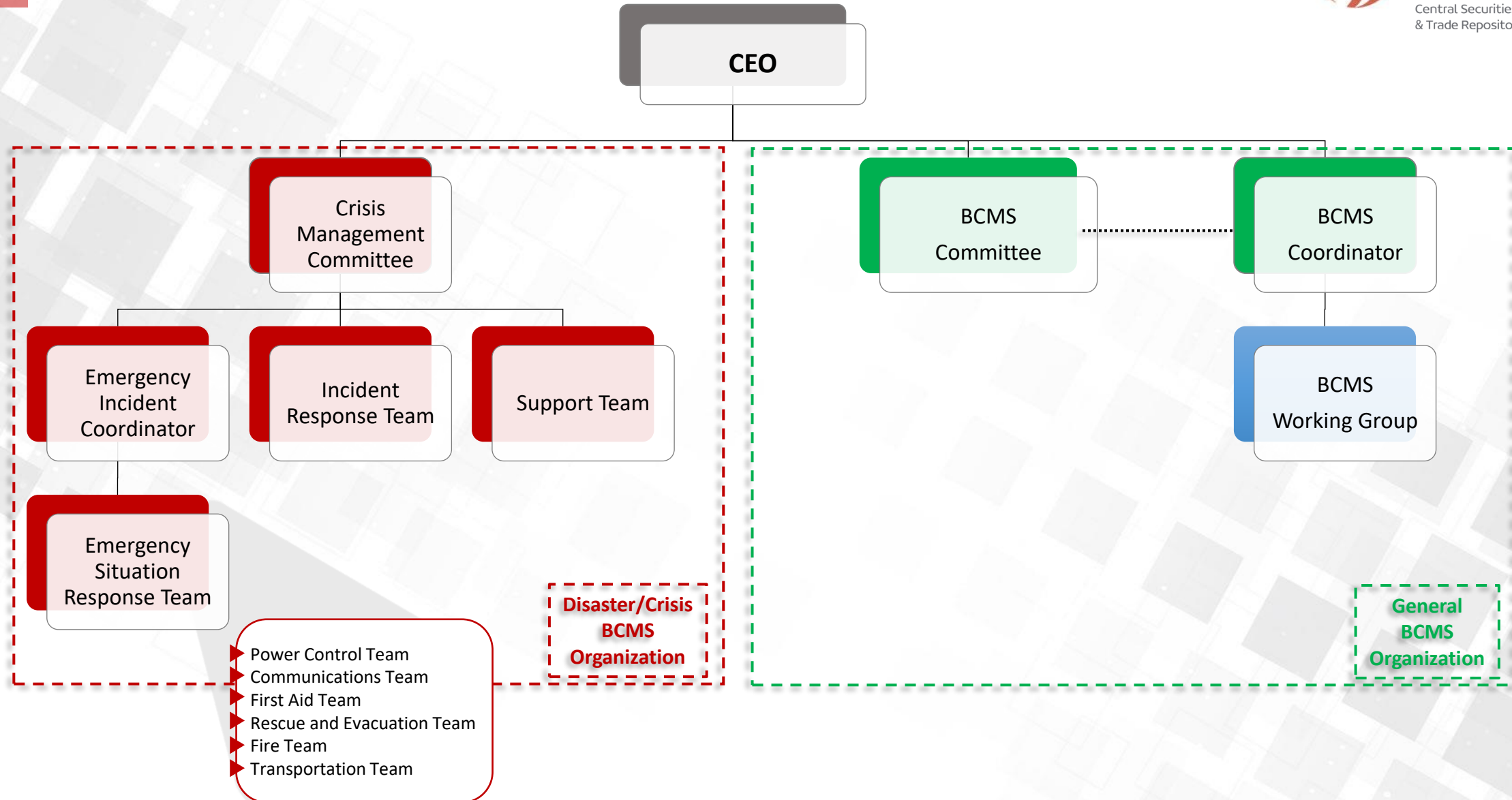
Data redundancy is provided instantly from the disaster recovery center.

Critical services and products' suppliers are backed up.

MKK BCMS's OBJECTIVES

- ☐ 2 hours recovery time objective (RTO) for critical services
- ☐ Conduct a table-top BCP exercise with the participation of Top Management
- ☐ Identify, measure, monitor and report BCMS related key performance indicators
- ☐ Test and exercise of BCP related part of MKK Communication Plan

MKK BCMS ORGANIZATION



MANAGEMENT INVOLVEMENT & LEADERSHIP



BCMS COMMUNICATION PLAN

MKK BCMS Communication Plan Set-up

What the subject and description of communication to be

The person who will communicate

Parties who will be communicated

When will be communicated

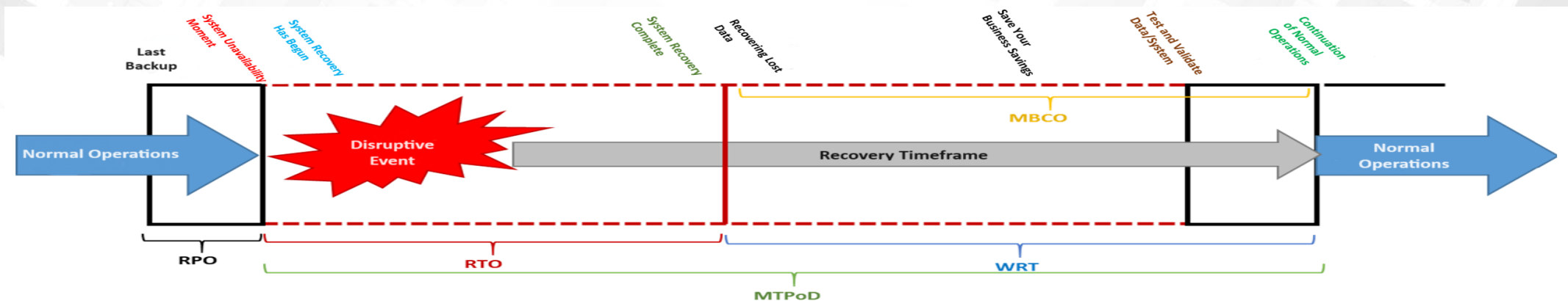
How will be communicate via which channel

What information will be communicated with

What the mutual expectations to be

BUSINESS IMPACT ANALYSIS (BIA)

- Business impact analysis processes are carried out to determine business continuity priorities and requirements.
- The impact levels of all CFS and BFS in terms of financial, compliance, reputational, operational effects of availability are analyzed and evaluated.
- While determining RTO (Recovery Time Objective), MTPoD (Maximum Tolerable Period of Disruption), RPO (Recovery Point Objective), and MBCO (Minimum Business Continuity Objective) values for the processes, the following criteria is taken into consideration:
 - Legal requirements of the process
 - Critical points of the service availability period
 - Critical time period and point
 - Impact level of the disruption



BCP TESTS AND EXERCISES

BCP TESTS AND EXERCISES

Business Continuity Plans (BCP) are created by taking into account the targets, risks and opportunities identified within the scope of management systems.

In order to ensure the effectiveness of BCMS, BCP exercises are annually conducted in line with the specified scenarios by the participation of Borsa İstanbul Group and MKK members.

Test and exercises are planned and executed periodically to verify the effectiveness of our business continuity strategies and solutions.

EMERGING CHALLENGES AND ADAPTATION

Emerging Challenges

Cybersecurity Threats

Technological Advancements

Regulatory Pressures

Global Disruptions

Adaptation Strategies

Technology Integration

Collaboration with Regulators

Focus on ESG (Environmental, Social,
Governance)

Human Factor

Artificial Intelligence

THANK YOU



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