Integrated Management Systems

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Integrated Management Systems requirements, key issues and case studies

- Brief review of IMS standards, management system standards and approaches
- Advantages and disadvantages of IMS
- IMS Structure and examples
- Key Issues and steps in implementing IMS
- Case study of implementation of IMS across multiple manufacturing sites for QMS, EMS, OHSAS
- Case Study of electronic implementation of IMS, Monitoring and KPI via software

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Common Management System Standards

- EN ISO 9001:2008
  - Quality management systems.
- EN ISO 14001:2004
  - Environmental management systems
- BS OHSAS 18001:2007
  - Occupational health and safety management systems.

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Sector Management System Standards applicable to IMS

- Food safety
- ISO 22000:2005
- Information security
- ISO/IEC 27001:2005
- Automotive
- ISO/TS 16949:2002
- Education
- IWA 2:2007
- Energy
- PC 242, ISO 50001
- Health care
- IWA 1:2005
- Local government
- IWA 4:2005
- Medical devices
- ISO 13485:2003
- Petroleum and gas
- ISO 29001:2003
- Ship recycling
- ISO 30000
- Supply chain security
- ISO 28000:2007

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PAS 99:2006 Specification of common management system requirements as a framework for integration

- Scope
  2 Normative references
  3 Terms and definitions
  4 Common management system requirements
  4.1 General requirements
  4.2 Management system policy
  4.3 Planning
  4.4 Implementation and operation
  4.5 Performance assessment
  4.6 Improvement
  4.7 Management review

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Common Requirements of quality, environmental and health and safety standards

Requirements of PAS 99	ISO 9001 Quality clause	ISO 14001 Environmental management clause	OHSAS 18001 Health and safety clause
4.1 General requirements	4.1	4.1	4.1
4.2 Management system policy	5.1, 5.3	4.2	4.2
4.3 Planning		4.3	4.3
4.3.1 Identification and evaluation of aspects, impacts and risks	5.2, 5.4.2, 7.2.1, 7.2.2	4.3.1	4.3.1
4.3.2 Identification of legal and other requirements	5.3(b), 7.2.1(c)	4.3.2	4.3.2
4.3.3 Contingency planning	8.3	4.4.7	4.4.7
4.3.4 Objectives	5.4.1	4.3.3	4.3.3
4.3.5 Organizational structure, roles, responsibilities and authorities	5.5	4.4.1	4.4.1
4.4 Implementation and operation			
4.4.1 Operational control	7	4.4.6	4.4.6
4.4.2 Management of resources	6	4.4.1, 4.4.2	4.4.1, 4.4.2
4.4.3 Documentation requirements	4.2	4.4.4, 4.4.5, 4.5.4	4.4.4, 4.4.5, 4.5.3
4.4.4 Communication	5.5.3, 7.2.3, 5.3(d), 5.5.1	4.4.3	4.4.3
4.5 Performance assessment			
4.5.1 Monitoring and measurement	8.1	4.5.1	4.5.1
4.5.2 Evaluation of compliance	8.2.4	4.5.2	4.5.1
4.5.3 Internal audit	8.2.2	4.5.5	4.5.4
4.5.4 Handling of nonconformities	8.3	4.5.3	4.5.2
4.6 Improvement			
4.6.1 General	8.5.1	4.5.3	4.5.2
4.6.2 Corrective, preventive and improvement action	8.5.2, 8.5.3	4.5.3	4.5.2
4.7 Management Review			
4.7.1 General	5.6.1	4.6	4.6
4.7.2 Input	5.6.2		
4.7.3 Output	5.6.3		

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Common Requirements of IT, food safety

Requirements of PAS 99	ISO/IEC 20000 IT Service management Specification clause	ISO/IEC 27001 Information Security clause	ISO 22000 Food Safety clause
4.1 General requirements	3	4.1, 4.2	4.1
4.2 Management system policy	3.1, 4.4.1	5.1	5.1, 5.2
4.3 Planning	4.1	4.2	5.3
4.3.1 Identification and evaluation of aspects, impacts and risks	4.1(f), 4.2(d)	4.2	5.3, 7.1, 7.2, 7.3, 7.4
4.3.2 Identification of legal and other requirements		4.2.1 (b2)	7.2.3
4.3.3 Contingency planning	8.2		3.3, 5.7, 7.10, 7.10.4
4.3.4 Objectives	4.1(b), 5.0	4.2.2	7.5, 7.6
4.3.5 Organizational structure, roles, responsibilities and authorities	4.2	4.2.2	5
4.4 Implementation and operation			
4.4.1 Operational control	4.2, 6.0	4.2.2	7.7, 7.8, 7.9
4.4.2 Management of resources	3.1, 3.3	5.2.1, 5.2.2	5.1, 5.3, 5.4, 5.5, 6.1, 6.2
4.4.3 Documentation requirements	3.2	4.3	4.2
4.4.4 Communication	3.1(b), 7	4.2.4(c)	5.6
4.5 Performance assessment			
4.5.1 Monitoring and measurement	4.3	4.2.3	7.6.4, 7.6.5, 8.3
4.5.2 Evaluation of compliance	4.3	4.2.3	8.4.3
4.5.3 Internal audit	4.3	6	8.4.1
4.5.4 Handling of nonconformities	4.3	4.2.4	7.6.5, 7.10
4.6 Improvement			
4.6.1 General	4.4	4.2.4, 8.1	8.1, 8.5
4.6.2 Corrective, preventive and improvement action	4.2.4(b), 8.2, 8.3	8.2, 8.3	8.2
4.7 Management Review			
4.7.1 General	3.1(g)	7.1	5.8, 8.5.2
4.7.2 Input		7.2	5.8.2
4.7.3 Output		7.3	5.8.3

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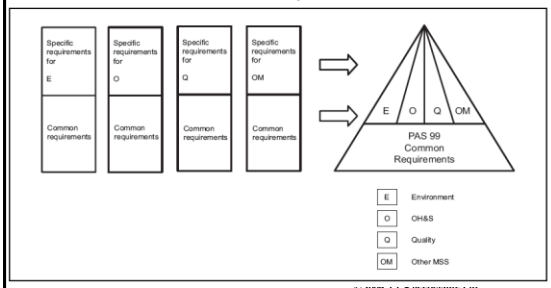
Integration of Management Systems PAS 99 example

Figure 1 Illustration of how the common requirements of multiple management system standards/specifications can be integrated into one common system



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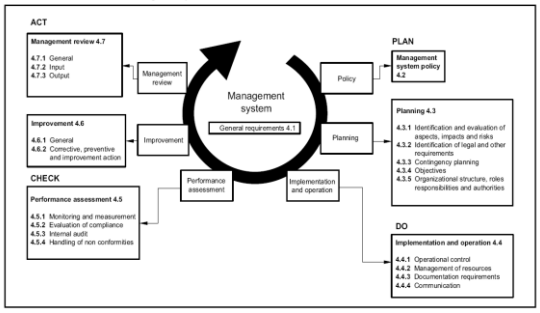
Same Plan Do Check Act process applies

Figure 2 Illustration of how PDCA and the common requirements combine to give the outline structure of the management system



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How useful is PAS 99?

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Advantages and disadvantages of IMS

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Perceived benefits of IMS

- ***Reduced costs***
  By avoiding duplication in internal audits, document control, training and administration, future management systems will be more effective.
- ***Time savings, efficiency***
  By having only one management review with combined audits .
- ***Optimised internal and external audits***
  By minimizing the number of audits required and maximizing the number of people involved?
- ***A holistic approach to managing business risks***
  By ensuring that all consequences of any action are taken into account, including how they affect each other and their associated risks.
- ***Reduced duplication and bureaucracy***
  By having one set of processes ensures the requirements of the specific standards are co-ordinated, workloads streamlined and disparate systems avoided.
- ***Less conflict between systems***
  By avoiding separate 'empires' for the likes of quality and environment, responsibilities are made clear from the outset.
- ***Improved communication, both internal and external***
  By having one set of objectives, a team approach culture can thrive and improve communication
- ***Enhanced business focus***
  By having one system linked to the strategic objectives of the business contributes to the overall continual improvement of the organization.
- ***Improved staff morale and motivation***
  By involving and linking roles and responsibilities to objectives, it makes change and new initiatives easier to implement and makes for a more dynamic and successful company?

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Possible Disadvantages of IMS

- **Development time and cost**
- **More complicated system compared to individual systems**
- **May limit the choice of certification bodies**
- **Integrated audits can be difficult to organise and manage**
  - more people and multi disciplinary auditee teams needed
  - some disciplines are easier to harmonise than others e.g. EMS and OHSAS have a lot in common,
  - QMS less so in terms of practical auditing
  - different work areas and disciplines involved
    - e.g. discharge points for EMS, PPE for OHS, product quality for QMS
  - More training for internal auditors
- **Management expectations may be hard to realise in practice**

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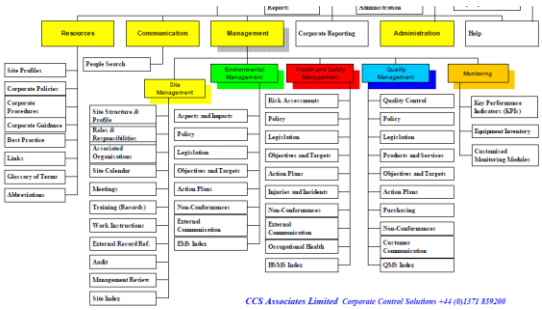
IMS Structure and examples



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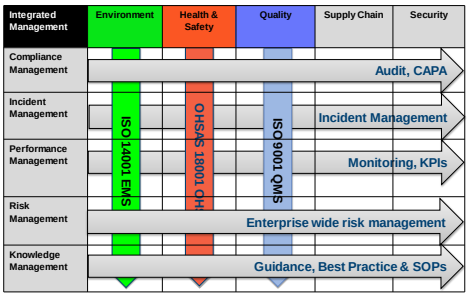
Enterprise Wide Integrated Management Approach



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Corporate v Local procedures

- **Example of IMS Structure and applicability of procedures**

System	Site	Meaning
		Management System
QMS		Quality Management System
EMS		Environmental Management System
OHS		OHSAS Management System
IMS		Integrated Management System (co-ordinated QMS, EMS and OHS plus others)
		Applicability to function/location
	GRP	Corporate controlled document which applies to all sites/works/units. It may be supplemented by local site documents such as work instruction and forms
	ABC	Applies to ABC site only. i.e. separate documents for each site are considered as the best solution.
	XYZ	Applies to XYZ site only. i.e. separate documents for each site are considered as the best solution.

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IMS v separate E/Q/S Procedures

Description	IMS	E	Q	S
Policies				
Mission, Vision	☑			
Management System Policy,		☑	☑	☑
Planning				
Risk Management: identification and assessment of Risks, Aspects, Impacts	☑			
Corporate Governance - Legal, Regulatory and Other Requirements	☑			
Objectives and Targets	☑			
Responsibility, authority, organisation	☑			
Management System Planning	☑			
System Implementation				
Human Resources. Training, Awareness and Competence	☑			
Management of other resources	☑			
Communication	☑			
Management System Documentation	☑			
Document control	☑			
Records	☑			

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IMS v separate E/Q/S Procedures

Description	IMS	E	Q	S	Corp	Site	Site	Site
Performance assessment								
Evaluation of compliance, non-conformities	☑							
Management System Audits	☑							
Improvements								
Corrective, preventative and improvement actions	☑							
Management Review	☑							
Operational Control	☑				☑			
Product realisation			☑		☑	☑	☑	☑
Quality Plans			☑		☑	☑	☑	☑
Operations		☑		☑	☑	☑	☑	☑
Emergency Plans		☑		☑	☑	☑	☑	☑
Monitoring and Measurement		☑	☑	☑	☑	☑	☑	☑

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Developing a system certifiable to ISO 14001, ISO 9001, OHSAS 18001

- Conduct initial review & action plan
- Get people involved
- Generate awareness and feedback
- Set up the organisation and resources
- Build a system framework
- Define processes
- Identify risks & assessment methods
- Develop procedures & methodologies
- Allocate roles and monitor activity
- Audit performance
- Conduct management review
- Make improvements
- Prepare for certification and subsequent maintenance

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Initial steps in IMS implementation

Appoint a certification body NO!

- Set (S.M.A.R.T.) targets
  - (Carry out a study of feasibility, extent and benefits of IMS by 01-09-2009)
  - Identify resources needed for implementation by 01-10-2009
  - Make action plan for implementation by 01-11-2009
- Form a team/task group and assign responsibilities
- Define the relevant processes
- Assess their suitability for integrated or local procedures
- Identify overlap between systems
- Generate awareness
- Determine resources needed
- Make action plan for implementation

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Case Study : Integrated Management System

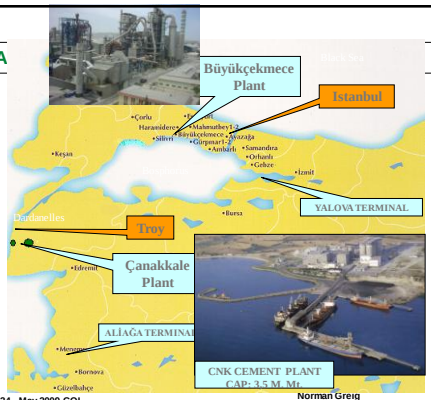
HEIDELBERGCEMENT SABANCI HOLDİNG AKÇANSA

Cement and Ports

- Büyükçekmece Cement plant. 2,85 million t p/a
- Çanakkale cement plant. 5 million t p/a
- Karçimsa slag cement grinding plant 0,4 million t p/a
- Ambarli Terminal & Port
- Aliağa Terminal & Port
- Yalova Terminal & Port

Subsidiaries

- BetonSA RMC plants
- AgregaSA Quarries
- EnerjiSA
  - Energy generation plants
- Arpaş
  - Towing, pilotage, waste



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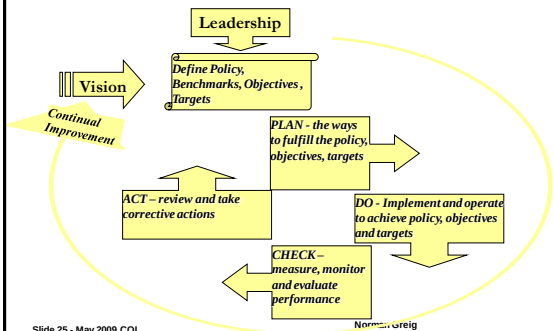
Pre-requisites for effective implementation



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Management Initiatives & Leadership

- Commit the resources needed
  - task teams, time, training, funds.
- Establish required organisation
- Set Policy, Benchmarks, KPIs
- Create the right environment: open, no blame, common benefits
  - Continuous Improvement programme
  - Suggestions and feedback procedures
  - No ROI needed for Environmental or H&S Projects
  - Publish targets and results e.g. emission data
- Make Objectives, Targets and Actions plans
- Define common risk assessment approach
- Define the audit and review system
- Integrate the Management System across factories
  - Quality, Environment, Health & Safety, KPI
- External Certification
- Extend the IMS across the Group

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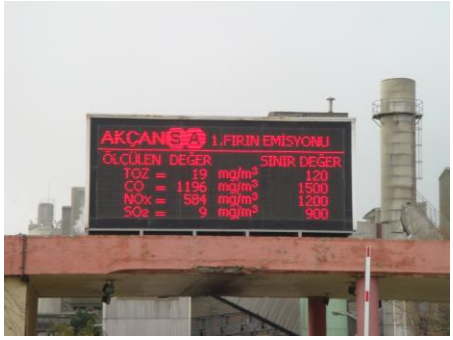
Leadership example – publish emission data



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Management System Organisation

	IMS Co-ordinator Task Group/Committee		
	QMS	EMS	OHS
Corporate Management System Representatives	QMR	EMR	SMR
Site Representatives	SQR	SER	SSR

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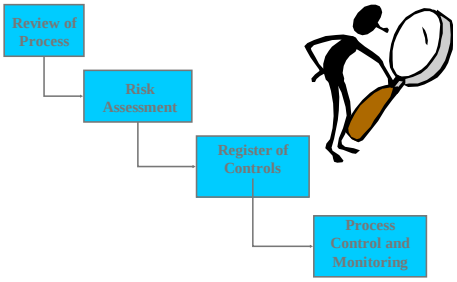
IMS - Aspects, Impacts and Risks Assessment



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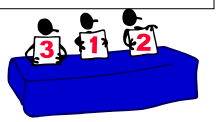
Scored Risk Assessment model

- Severity (S)
- Frequency (F)
- Control (C)
- Significance = S*F*C



48 to 125	Highly Significant
18 to 47	Significant
1 to 17	Not Significant
-1 to -15	Beneficial Significance

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Training & Awareness

Summary of persons trained in awareness of the Integrated Systems

	Blue collar	White collar	total
QMS	133	49	182
EMS	709	290	999
OHSAS	478	241	719
Total	1320	580	1900

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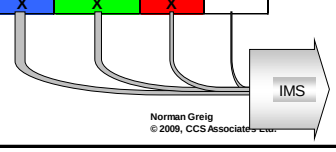
IMS SOP structure example

		Quality Management System	Environmental Management System	Health Safety System	Other management Systems
		QMS	EMS	OHS	OMS
Corporate SOP		X	X	X	X
Site SOP & WI	Site 1	X	X	X	
	Site 2	X	X	X	
	Site 3	X	X		
	Office 1	X		X	X
	Logistics	X	X	X	



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Example system procedures

Doc. Ref.		*Akçansa Çimento San. ve Tic. A.Ş.*			
IMS-GRP-10-P01-A		Index of GRP and Çanakkale Environmental and Quality			
		Related Documents			
EMS-BÇM-02-P01-B1	4.3.1	Site Process Flow (Büytükçeknece)	ET	Issue 01	10/07/2002
	4.4.2	7 Training, Awareness and Competence	ET		
IMS-GRP-07-P01	**4.4.2**	**Training, Awareness and Competence**	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-A	4.4.2	Annual Training Plan	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-B	4.4.2	Internal Training Form	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-C	4.4.2	Report for Annual Training Plan	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-D	4.4.2	Orientation Program Form	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-E	4.4.2	Evaluation of the Training Activity	ET	Issue 01	10/07/2002
IMS-GRP-07-P01-F	4.4.2	Training Matrix		Issue 02	04/09/2002
	4.4.3	8 Communication	ET		
IMS-GRP-08-P01	**4.4.3**	Communication	ET	Issue 01	16/07/2002
IMS-GRP-08-P01-A	4.4.3	Complaint Log	ET	Issue 01	04/09/2002
EMS-GRP-08-P01-B	4.4.3	Clinker Production and Fuel Consumption Table	ET	Issue 02	05/09/2002

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Achievement of Third Party Certification

CE Product Quality Certification	TSE/KCK
ISO9001 – Quality	BSI/TSE
ISO14001 Environmental	BSI
H&S OHSAS 18001	BSI

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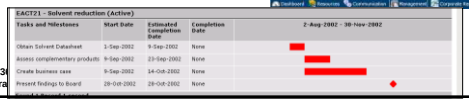
Case Study: Electronic Integrated Management System

IMS requirements

- Document Control
- Common Management Systems PDCA Tools (Incidents, Audit, Assessment, Action Plans, Training, Procedures, Meetings . . .)
- Consistent workflow configuration across systems (Roles, People, Tools)
- Interactive planning, updates and alerts
- Flexible access by individual
- Corporate Reporting
- User definable
- Multi-lingual



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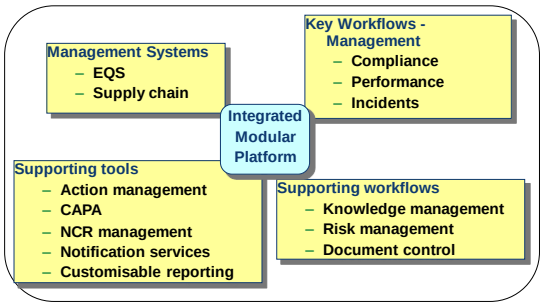
What does it do?



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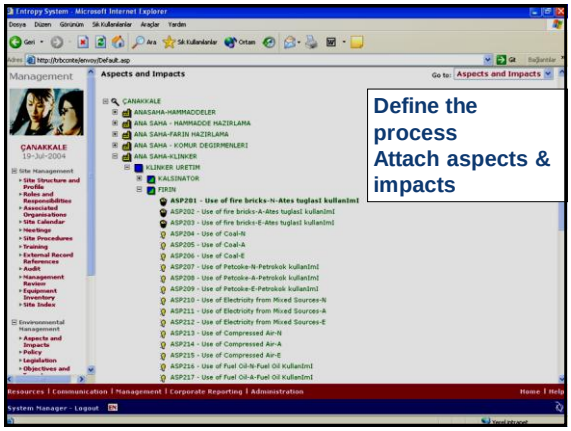
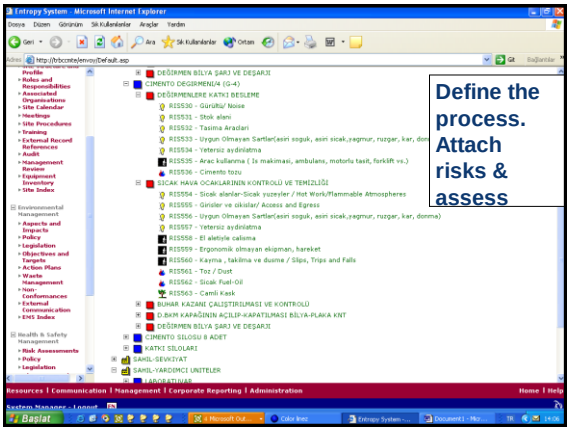


Define the process
Attach aspects & impacts



Define the process.
Attach risks & assess

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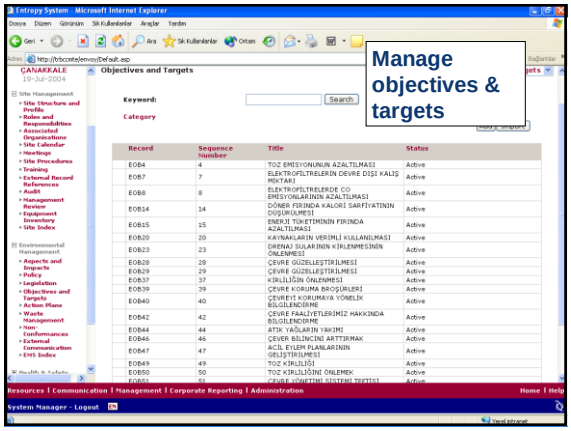

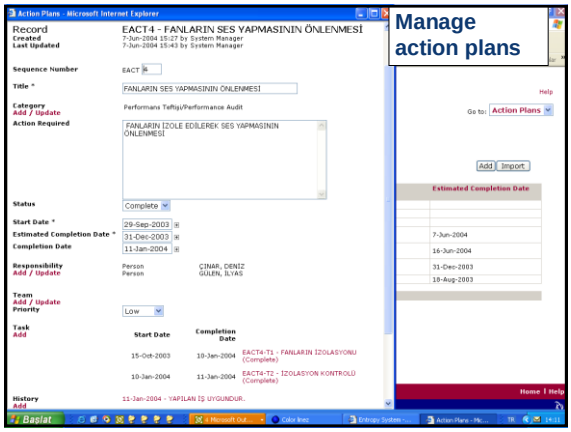

Steps to IMS implementation via The BSI-Entropy IMS Solution

Results of implementation

- **Paperless system**
- **Integration of targets, action plans and risks**
- **Automatic generation of corrective actions and follow up**
- **Reduction in uncontrolled risks**
- **Better use of human resources**
- **Cost savings**

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CCS Associates provide corporate control solutions via consultancy, training and software for:

- Integrated Management Systems
- Environmental management
- Quality management
- Statistical process control
- Process improvements

mainly in the UK, Greece, Turkey and Balkans.

Thank You

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