

C4I Based Emergency Operation Center Model



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MG(Ret.) Hwang, Chul Joon
(Former Director of Information Policy Bureau,
MND)

Korea Institute for Military Studies





Order



- ❖ Disaster Management System of Korea
- ❖ KDMS Improvement Proposition
- ❖ Military C4I System
- ❖ Emergency Operation Center(EOC)
Model





Korea Disaster Management System (KDMS) and Improvement Proposition





Characteristics of Disasters



- ❖ Unpredictable
- ❖ Large-scale, Huge damage
 - ❖ Typhoon “Maemi” : Death (127), Property damage (\$3.7billion)
- ❖ Needs on time countermeasures to cope with various disasters.
- ❖ Each related agency provides disaster prevention, and consolidated response.
- ❖ Government agencies’ responsibilities and duties will be increased





Disaster Authorities (Korea)



	Natural Hazard	Security Emergency	Rescue
Related Law	Natural Hazard Countermeasure Law	Disaster Management Law	Disaster Management Law
State Agency	NDPCH (Minister of Mogaha) Disaster Prevention Officer	National Accident Management HQ (Competent Minister) CDDMB	National Rescue HQ (Minister of Mogaha) Fire Service bureau
Wide area Autonomy	Provincial DPCH (Major, Governor) Construction & Transportation bureau	Accident Countermeasure HQ (Major, Governor) Construction & Transportation bureau	Rescue HQ (Major, Governor) Fire Fighter HQ
Base Autonomy	Municipal DPCH (Major, County chiefs, District head) Disaster Management	Accident Mgmt. HQ (Major, County chiefs, District head) Disaster Prevention Section	Rescue HQ (Major, County chiefs, District head) Fire Station



Foreign Disaster Management

	National	Local	
U.S.A	FEMA (Executive Branch)	<ul style="list-style-type: none"> · State: State EMA · City, County : Emergency 	State-Federal Plan
Germany	Department of Internal Affairs (State Civil Defense bureau)	<ul style="list-style-type: none"> · State government · State congress 	Integrated disaster management
Japan	<ul style="list-style-type: none"> · Dept. of Homeland - Disaster Prevention Bureau 	<ul style="list-style-type: none"> · Province · City 	<ul style="list-style-type: none"> · Fire Service takes in charge



Current Disaster Management



- ❖ Decentralized Management : Individual Reaction
 - ❖ Dispersed disaster services and functions among national authorities
- ❖ Divided disaster management : Civil Defense and Fire service
- ❖ Insufficient emergency response system
 - ❖ Emergency response capabilities
 - ❖ Decentralized emergency system
- ❖ Insufficient Disaster Prevention and Recovery
 - ❖ Insufficient Prevention and Investigation measures
 - ❖ Needs consistent Recovery policy
- ❖ Low level Disaster Management System





Related National Authorities



- ❖ Office of Prime Minister
- ❖ Ministry of Government Administrations & Home Affairs
- ❖ Ministry of Construction & Transportation
- ❖ Ministry of Commerce, Industry and Energy
- ❖ Ministry of Information & Communication
- ❖ Ministry of Health & Welfare
- ❖ Ministry of National Defense
- ❖ Other related authorities





Improvement Proposition



- ❖ Reform of Law and system
- ❖ Combination of Centralized and Distributed Disaster Management
 - ❖ Centralized : National Authority Disaster Countermeasure
 - ❖ Distributed : each authorities' reaction measure
- ❖ Coordinated emergency response among national, local authorities and field office
- ❖ Early construction of improved disaster management system



DMS Improvement Proposition

- ❖ Organize Integrated Disaster Management Center which controls every disaster environment
- ❖ Report field situation quickly to National and local authorities
- ❖ Damage Minimization
 - ❖ Prevention and preparedness
 - ❖ Prompt situation awareness
 - ❖ Fast decision making process
 - ❖ Damage avoidance or mitigation
 - ❖ Quick recovery support
- ❖ Appropriate utilization of media
- ❖ Using military C4I technology EOC can be improved.





Military C4I System



- ❖ C4I : Command, Control, Communication, Computers and Intelligence
- ❖ Used in Gulf War(1983), kosovo(1998), Afghanistan, and Iraq
- ❖ ROK Armed Forces : system operation(1996), under construction of base system(2000~)
- ❖ 'Strike before enemy attack' – guarantees the victory
 - ❖ Real time information infusion (sharing information through all level echelon)
 - ❖ Visualization of battlefield situation
 - ❖ Support quick decision making
 - ❖ Real time operation (Shooter, etc.)





Evolution of PDA time



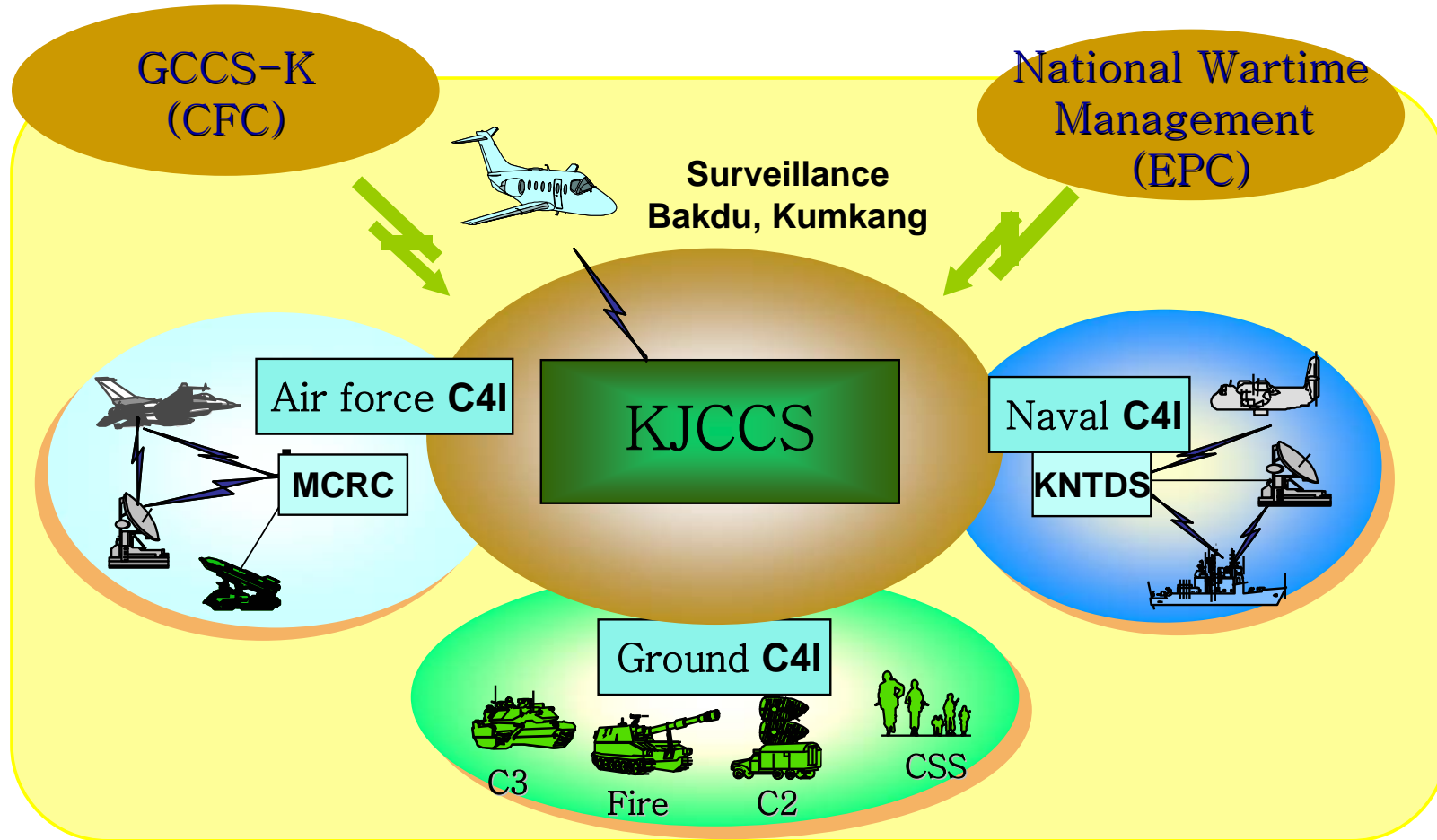
U.S. Armed forces PDA cycle time
(Sensor → Shooter)

- ❖ Gulf War ('83) : 72hr
- ❖ Kosovo ('98) : 4hr
- ❖ Iraq ('03) : almost real time

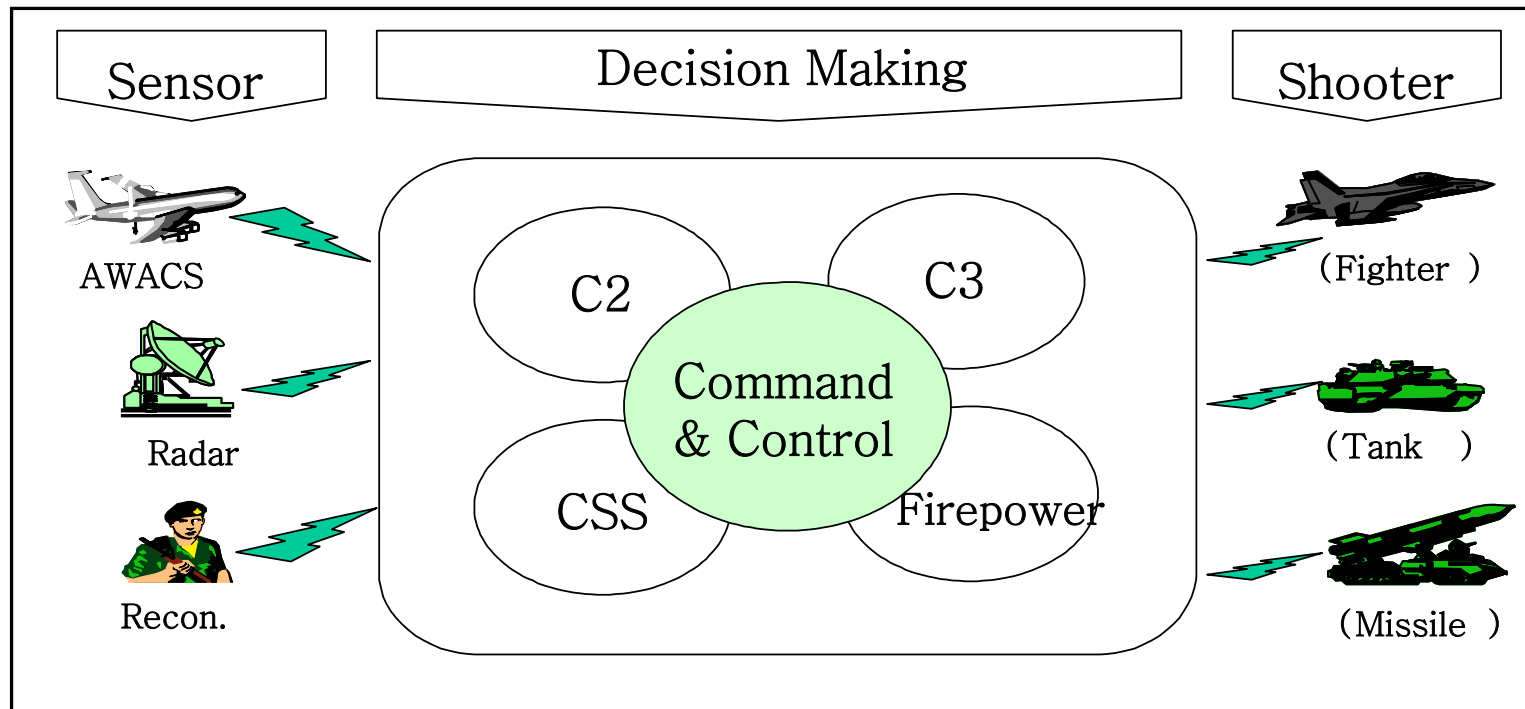




KJCCS Concept

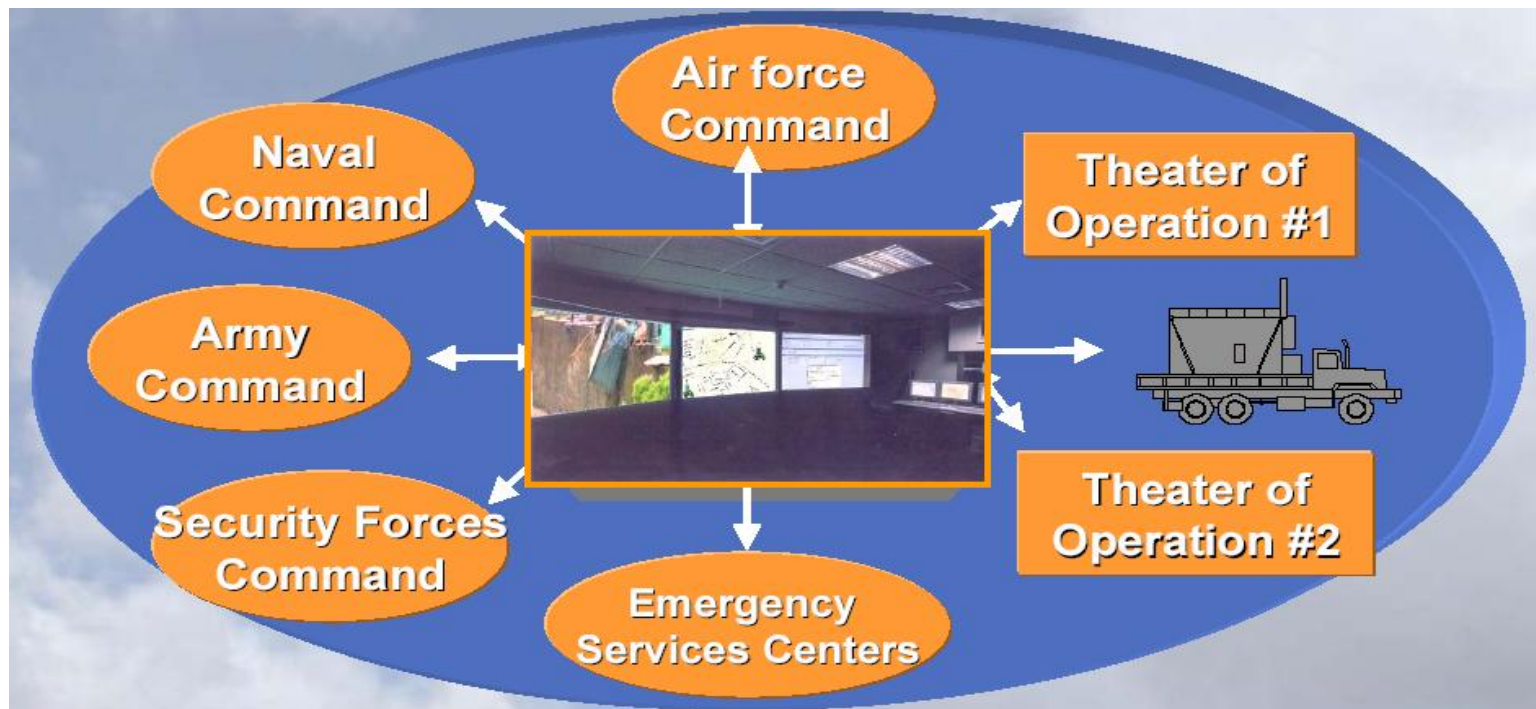


Ground Tactical C4I system





Application of Military C4I





Application of Military C4I



National Emergency Operation Center

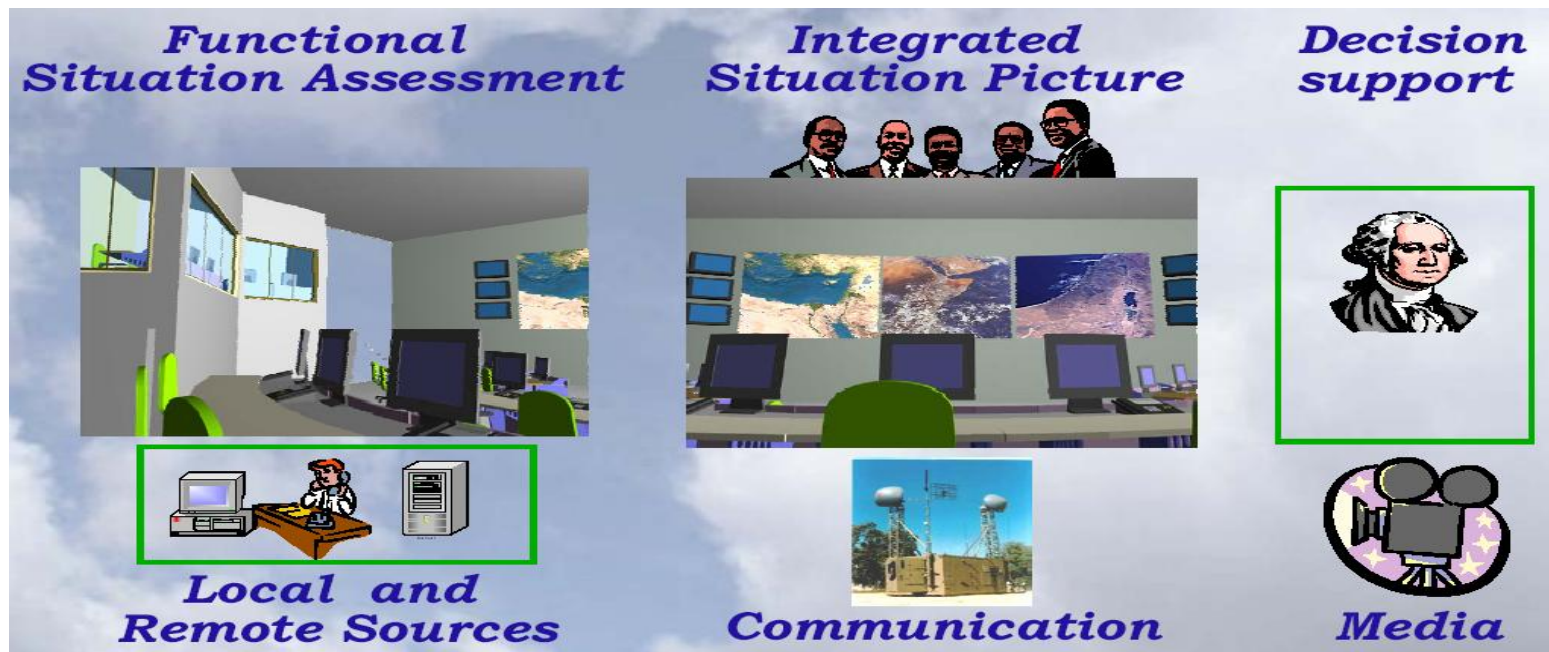




Application of Military C4I



❖ National Emergency Operation Center



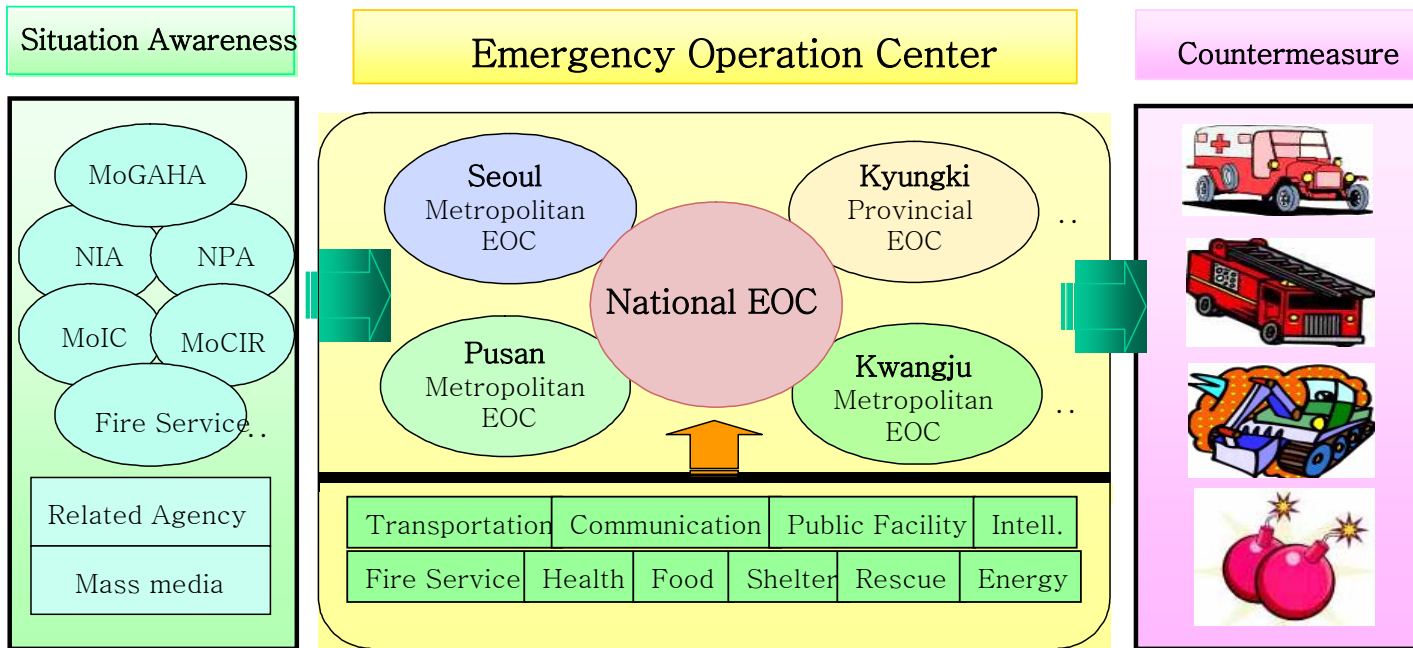


Emergency Operation Center Model



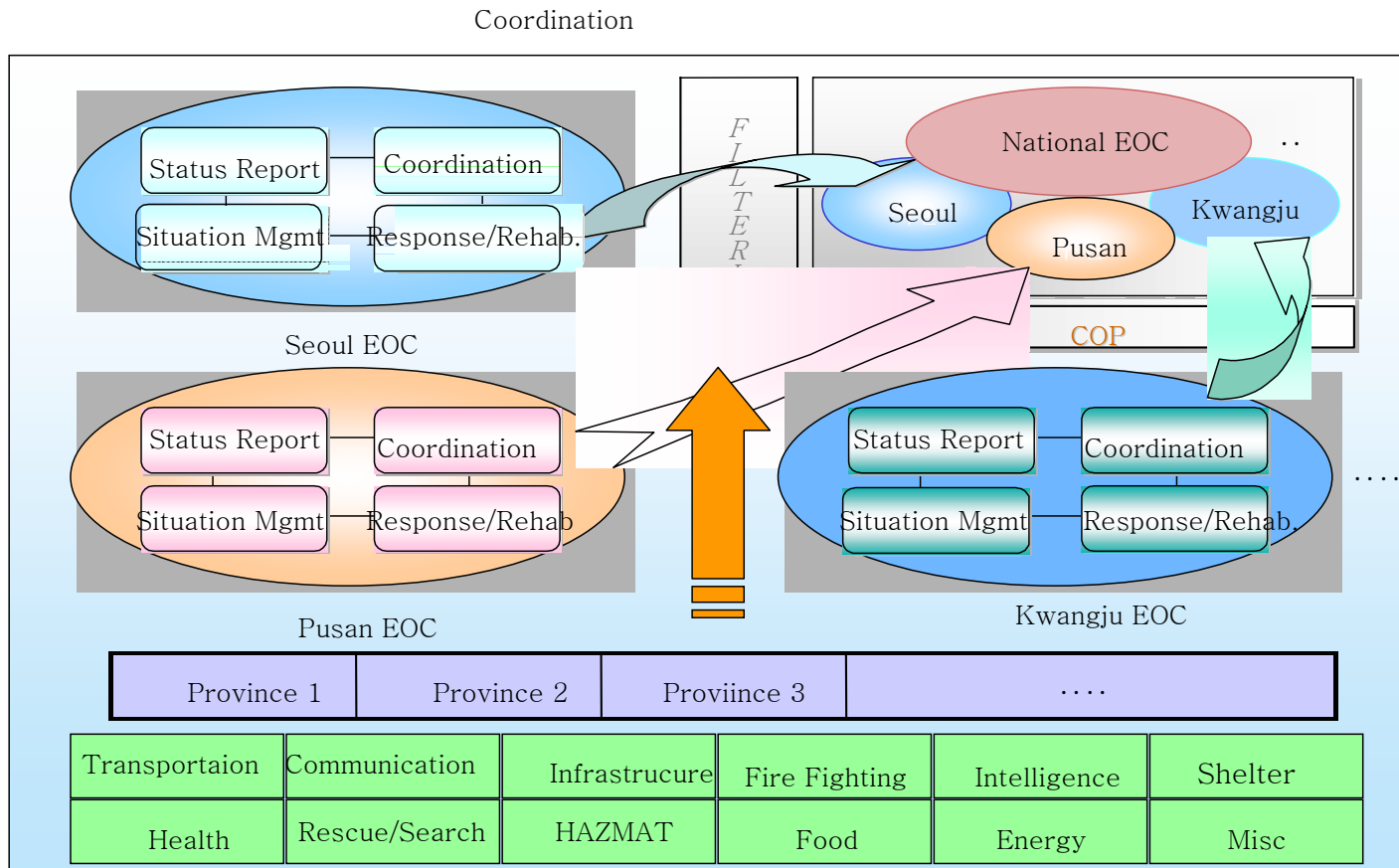
National Emergency Operating Concept

Emergency Operation Center provides situation awareness, systematic and effective response



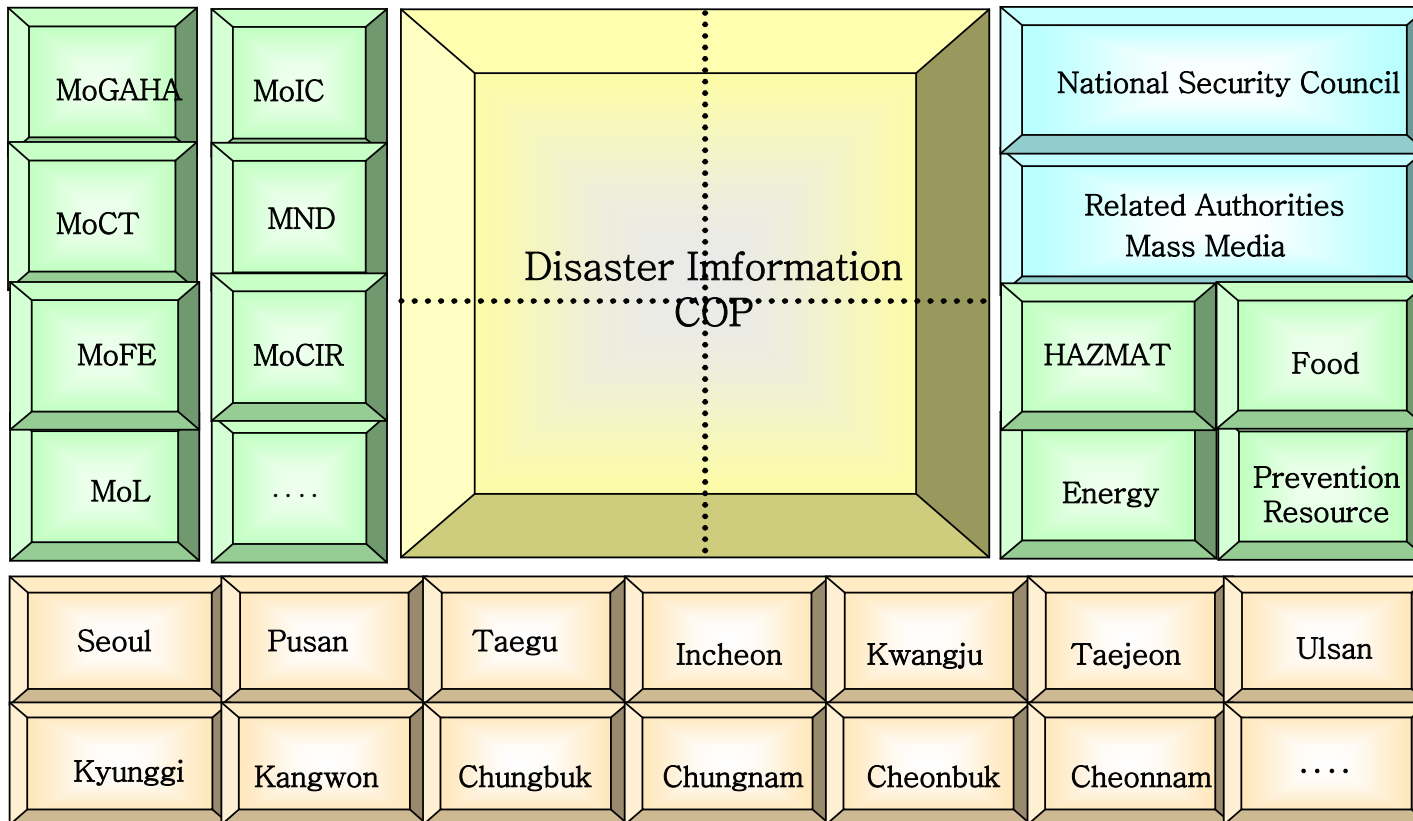


National EOC Process





National EOC Video Wall





Video Wall on COP

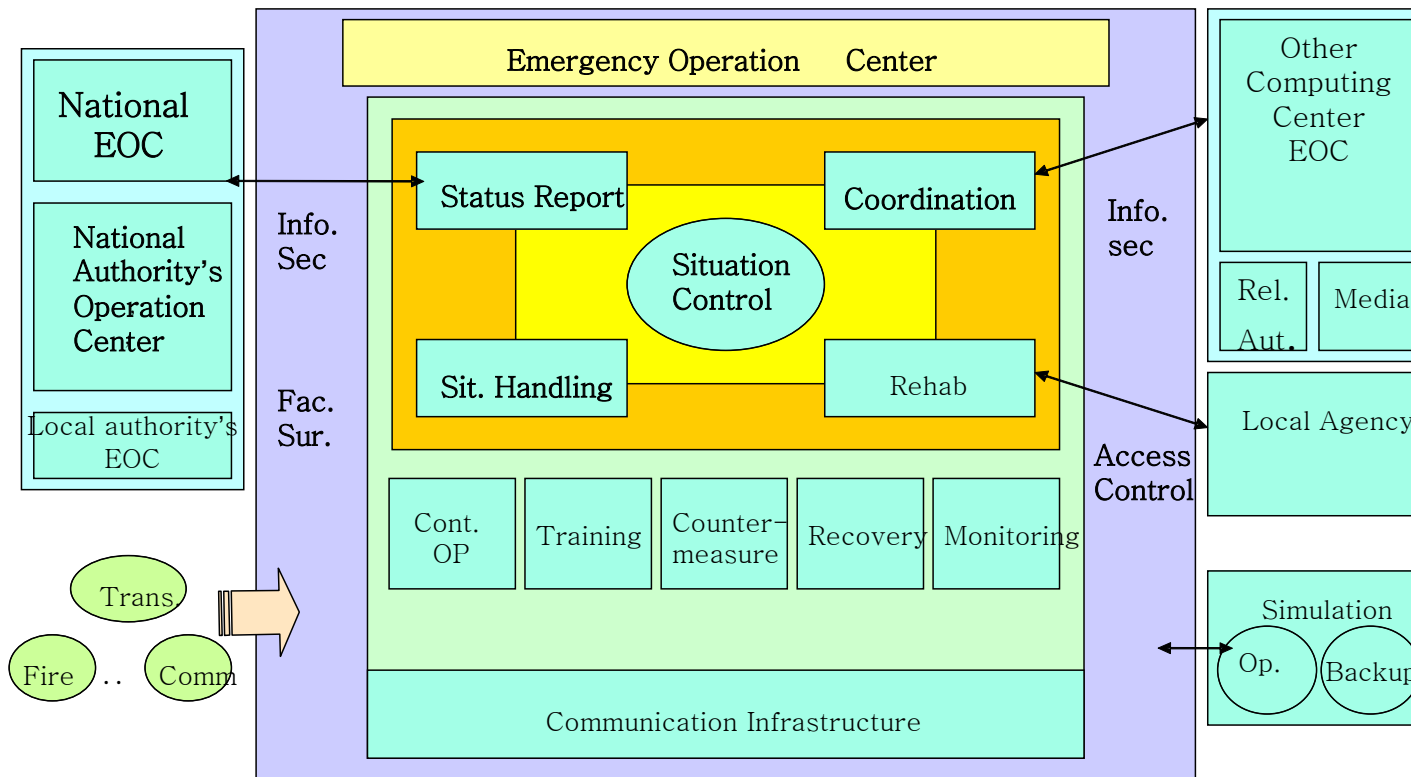
Disaster Situation		Satellite Image		
Transp.			Hazmat	
Comm.			Food	
Public Facility			Energy	
Fire Service				
C2				
Health				
Rescue			Misc.	
Video Conf.	Monitor	Message Handling	Picture Image	Command Decision Analysis

※ COP : Command Operation Picture



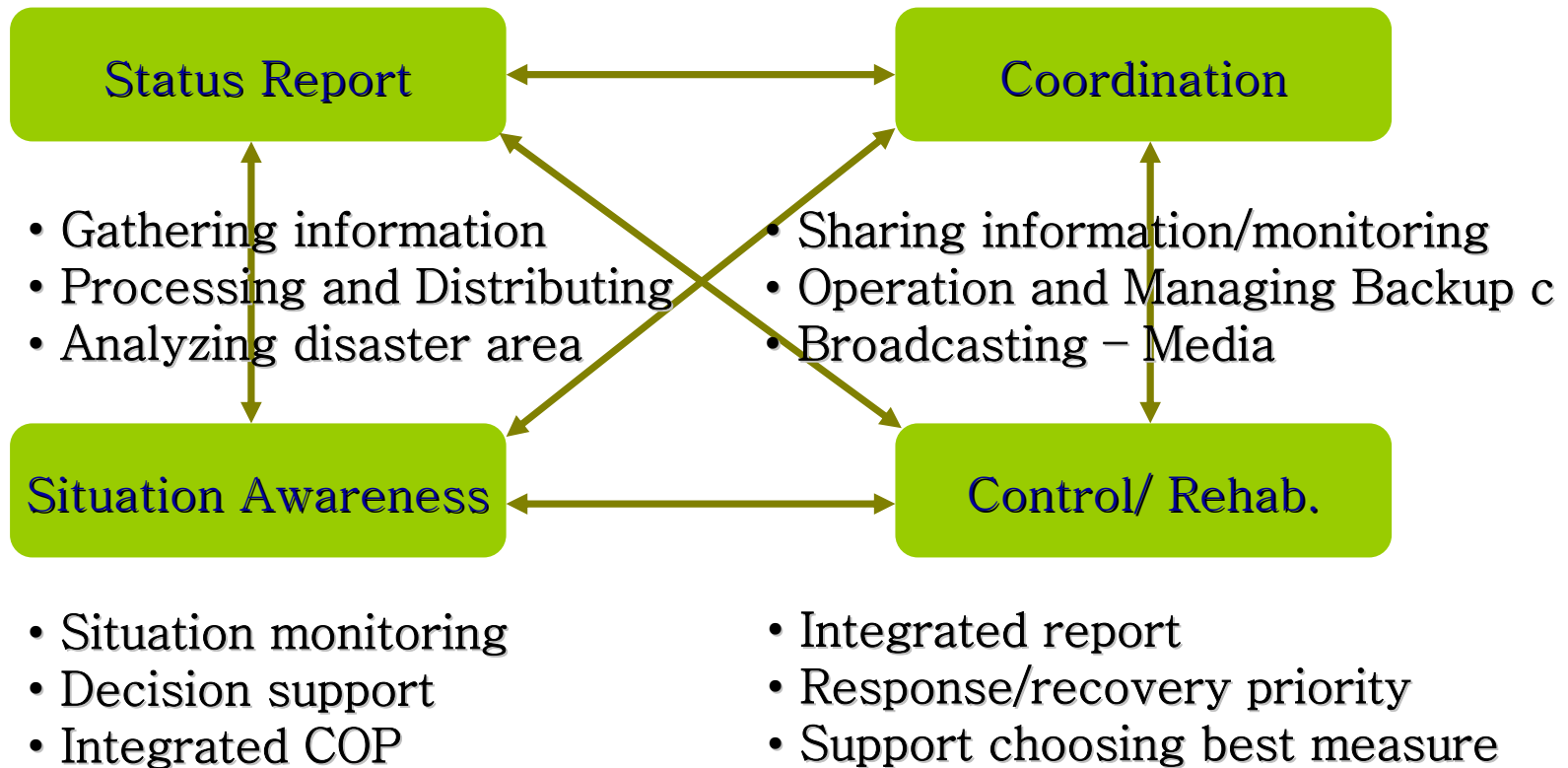


Local autonomy EOC





EOC Process





Expectations



- ❖ Preventive Management through Disaster DB
- ❖ Timely Counteract through real-time monitoring
- ❖ Damage minimization through information sharing among Central and Local EOC, related authorities, Broadcasting, Media
- ❖ Cost Minimization through best Countermeasure/Rehabilitation agency selection
- ❖ Efficient Afterward Management





Q & A

Thank You

