

โครงการจัดตั้งวิทยาศาสตร์ภูมิภาค  
ภาคตะวันออกเฉียงเหนือ

Regional Science Square

- CONTENT REPORT -

Jul. 11. 2018



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# 01 Overview

## Summary

- Location : อุทยานการเรียนรู้สิรินธร เทคโนโลยี มหาวิทยาลัยเทคโนโลยีสุรนารี (มทส.) จ.นครราชสีมา
- Available Areas : 2,000 m<sup>2</sup>
- Client: National Science Museum, Thailand

## | Object

- To study visitor's behaviors prior to the Job World in Innovation Museum
- To maintain inner-city visitors, which the majority is family-type

## | Target Group

- 70 % elementary school : 30% Middle school

## | Contents

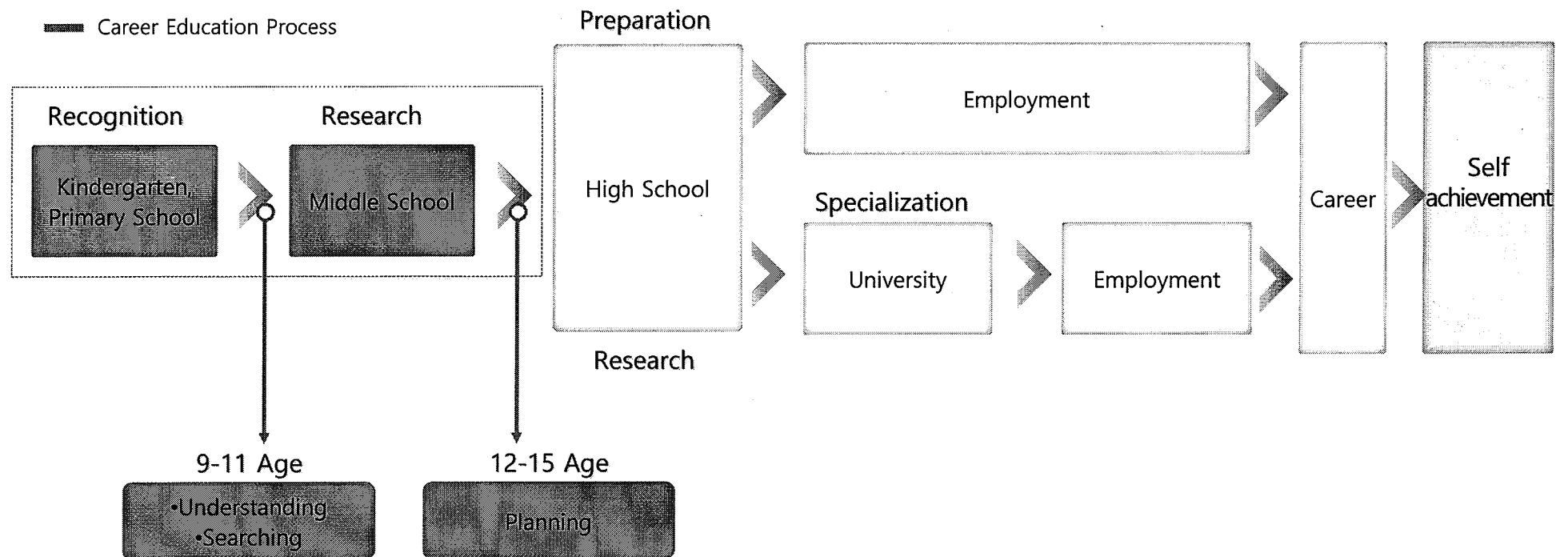
- Selected 4 clusters with 2-3 jobs (based on Job World in IM)

## 02 Basic Intention

— Concept

# JOB SIMULATION

Job experience includes indirect experience of various forms as well as directly experience of the jobs.  
Each visitors well understands the jobs through direct/indirect experience and is satisfied through related activities



# 02 Basic Intention

## Program Strategy

Suggesting job experience program considering visitors' age-specific development feature

### ★ Age-specific developmental features

Age	Method
18M-24M	Practice play
24M – 4Y	Symbol play
4Y- 8Y	Imitation/Rules/Cooperation
9Y -11Y	<b>Hands-on / Observation</b>
12Y -15Y	<b>Observation / Interactive</b>

### ★ Contents Plan for each target group

Area	Jobs	Focus	
		elementary school	Middle school
Bio Medical Canter	Biomedical engineer		✓
	Pharmaceutical scientist	✓	
	Cosmetic scientist	✓	
Handicraft workshop	3D- designer	✓	
	Metal crafter		✓
	Wood crafter		✓
Disaster Management Institute	Climate change analyst	✓	
	Disaster planner		✓
	Emergency medical technician	✓	
Aerospace Research Institute	Aerospace engineer	✓	
	Info-communication technician		✓
	Pilot	✓	

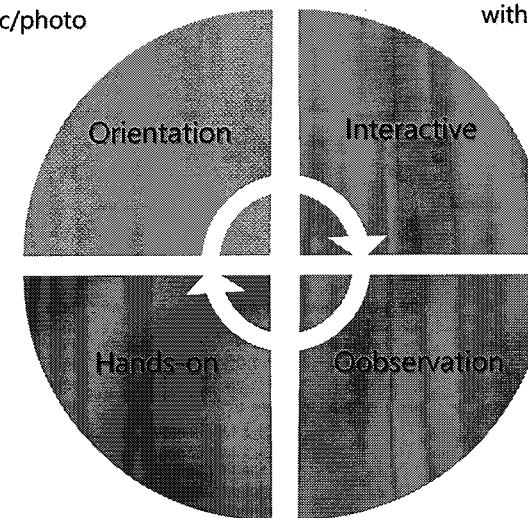
### ★ Type of Experience in Development Features

#### Orientation

-Intro with video/graphic/photo

#### Interactive

-Indirect Experience with Interaction Media



#### Hands-on

-Direct experience with equipment  
-Presentation & Discussion

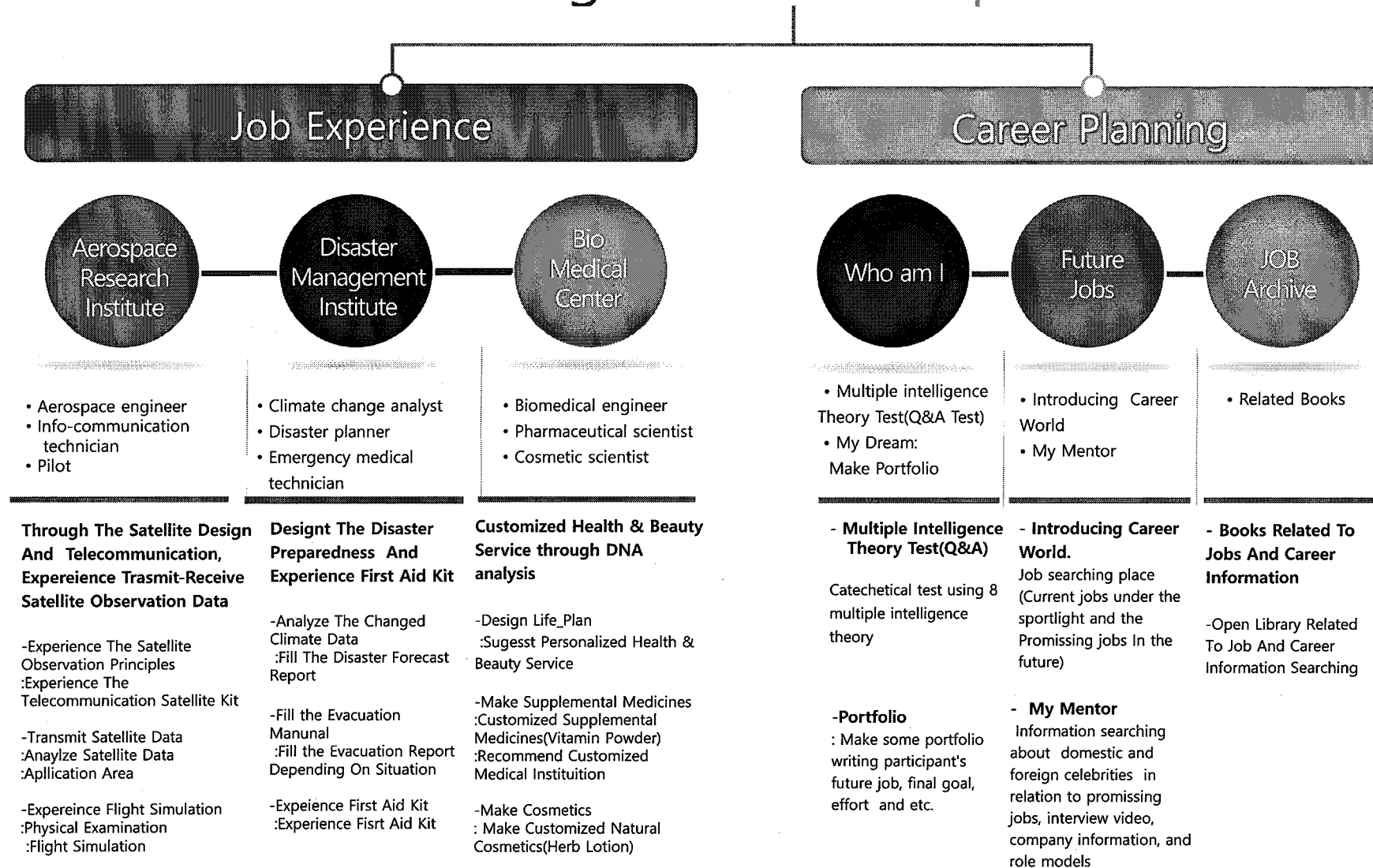
#### Observation

- Learning with Exhibitions  
-Review, Q&A and Quiz

# 03 Contents Framework

— Exhibition Story

## Regional Science Square



# 03 Contents Framework

## Exhibition Scenario

Cluster	Corner	Item	CODE	Mission	Exhibition Contents	MEDIA				
						Model	AV	IA	SY	Graphic
Job Experience	Aerospace Research Institute	Aerospace Engineer	MJ1-2	<Send the high-tech artificial satellite into the orbit and transmit the data observed by the satellite necessary for each fields>	-Learn the types and the principles of artificial satellite and experience the communication with the Earth station through the Satellite and Antenna model.	Satellite & Antenna Working Model(Scale Down) (1SET) /Changeable Antenna Board Kit (4SET)				Graphic Scasi (1EA) /Graphic Sheet (1EA) /Stand Panel (3EA) /Stand Panel (1EA) /Sample Paper (1EA)
		Info-Communication Technician	MJ1-3		-Analyze satellite observation data(marine/ agriculture / Soil / Disaster) transmitting the data which could be utilized and required in each field.			Information Searching SAW (1EA)	24"PC (4SET) /55"DID Monitor (4EA) /55" Monitor (2EA) (For Display)	Graphic Scasi (1EA) Cutting Sheet(1SET) Lighting Sign (4EA) Still Images (6Cuts/2SET)
		Pilot	MJ1-4		-Experience the physical test and flight simulation to become a veteran pilot	Height/Weight (1SET) /Eye Sight (1SET) /Hearing Ability (1SET) /Spirometry (1SET) /Blood Pressure (1SET) /Sit-up Equipment (2EA) /Uniform-Staff (1SET) Participants (4SET)			Flight Simulation (including SW) pc (2SET) /Simulation Monitor (3EA) * (2SET)	Graphic Scasi (1EA) /Graphic Sheet(3EA) /Graphic Sheet(6EA)/Stand Panel (1EA) /Graphic Sheet(2EA) /Graphic Cutting Sheet (1SET) .Floor Type /Work Paper(A4/1EA)
	Disaster Management Institute	Climate Change Analyst	MJ2-2	<Prepare for future disaster through the past domestic cases and cultivate the capacity that respond the emergency situation>	-Presenting the Thai map to a media table, through the annually changed climate image graphic panel, participants analyze the actual case which was occurred in Thailand and then forecast the time(when flood will happen) ,region and so on.		Video (2EA)		42" Monitor (1EA) 32" Monitor (1EA)	Graphic Scasi(1EA) /Lighting Sign (1EA) / Stand panel (1EA) /Graphic Cutting Sheet (1EA) /Sample Paper (1EA) /Work Paper (1EA)
		Disaster Planner	MJ2-3		- After experience the simulation( emergency exit route), fill the evacuation manual	Topography Simulation Model /Experience Block Model /Magnetic Pieces Model				Graphic Scasi (1EA) /Graphic Sheet (1EA) /Text Scasi (1EA) /Lighting Sign (3EA) /Graphic Sheet (1EA) /Text Scasi (1EA) /Sample Paper (1EA) /Work Paper (1EA)
		Emergency Medical Technician	MJ2-4		-Reenact scene of fire, experience the evacuation route, first aid kit personally.	Cardiac Defibrillator(3EA) /CPR Dummy ,Mat(3SET) /First Aid Kit (1SET) /Fire Extinguisher(1SET) /reenact Fire Scene(1SET)				Graphic Scasi (2EA) /Graphic Sheet (1EA) /Graphic Sheet (3EA) /Text Cutting Sheet (1EA) /Graphic Scasi (1SET)

# 03 Contents Framework

## Exhibition Scenario

Cluster	Corner	Item	CODE	Mission	Exhibition Contents	MEDIA				
						Model	AV	IA	SY	Graphic
5F Job Experience	Bio medical Center	Biomedical Engineer	MJ4-2	<Provide customized health & Beauty service through DNA analysis >	-After analyze DNA Data, give some comprehensive consulting such as customized bio plan offer and medical devices offer.					Text Scasi(1EA) /Graphic Cutting Sheet(1EA) /DNA analysis data image (4Cuts/ 3SET) /Sample Paper(1EA)/ Work Paper(1EA)
		Pharmaceutical Scientist	MJ4-3		-After analyze DNA data at first, and then recommend some medical institution through the manufacture of pharmaceuticals and customized medical counseling	Medicine Making Kit (2SET) --Disposable Expendables /Experiment Equipment (2SET)				Text Scasi(1EA)/ Graphic Sheet(1EA)/ Graphic Cutting Sheet(1EA)/ Sample Paper(1EA)
		Cosmetic Scientist	MJ4-4		-After analyze DNA data, and then manufacture cosmetics using natural materials and offer customized beauty counseling	Cosmetic Making Kit/(2SET)/Experiment Equipment Set (2SET)				Graphic Cutting Sheet(1EA)/ Sample Paper(1EA)

# 03 Contents Framework

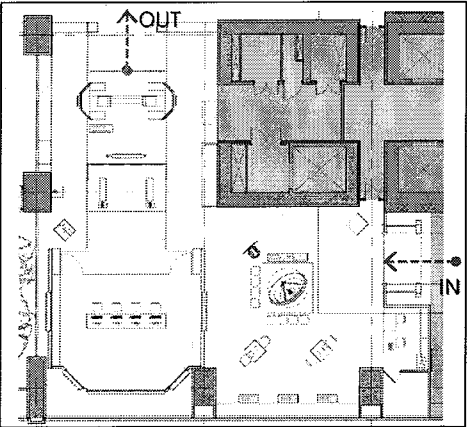
## Exhibition Scenario

Cluster	Item	CODE	Exhibition Contents		MEDIA				
					Model	AV	IA	SY	Graphic
Career Planning	Who Am I	<b>Multiple Intelligence Theory Test</b>	MJ5-1	- Catechetical test using 8 multiple intelligence theory	Writing Supplies(4SET)				Channel Letter Sign (1EA) /Graphic Cutting Sheet (2EA) /Sample Paper (1EA) /Work Paper (1EA)
		<b>Portfolio</b>	MJ5-2	- Make some portfolio writing participant's future job, final goal, effort and etc.	Writing Supplies(4SET)				Graphic Cutting Sheet (2EA) /Sample Paper (1EA) /Work Paper (1EA)
	Future Jobs	<b>Introducing Career World</b>	MJ6-1	- Job searching place (Current jobs under the spotlight and the Promising jobs in the future)				27" Digital Frame (3EA)	Text Scasi (7EA) /Still Images (6Cuts/3SET) / Graphic Sheet (6EA) /Text Scasi (4EA) /Lighting Sign (4EA)
		<b>My Mentor</b>	MJ6-2	-Information searching about (Thailand) domestic and foreign celebrities in relation to promising jobs, interview video, company information, and role models			Information Searching Software(1EA)	24" Monitor/PC(2EA)	
	JOB Archive	<b>Job Information</b>	MJ7-1	-Books related to jobs and career information					Text Scasi (3EA) /Text Cutting Sheet (3EA) /Graphic Cutting Sheet (1EA)

04 Cluster1 Job Experience

— Aerospace Research Institute

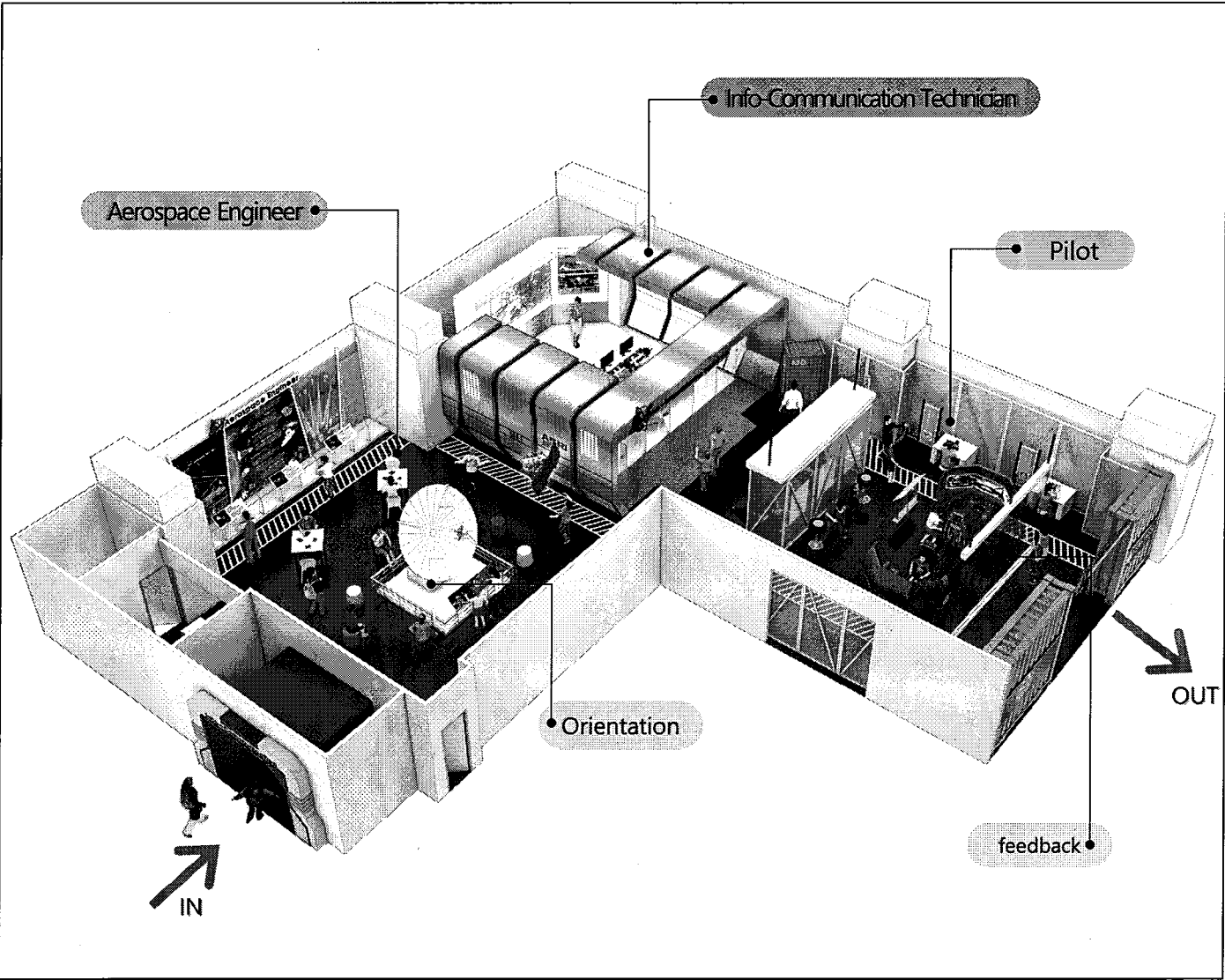
| Floor Plan



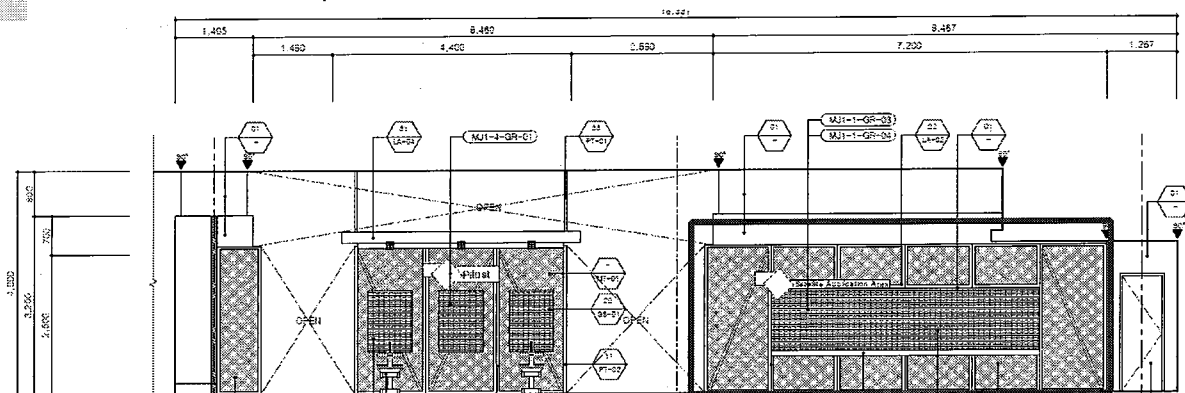
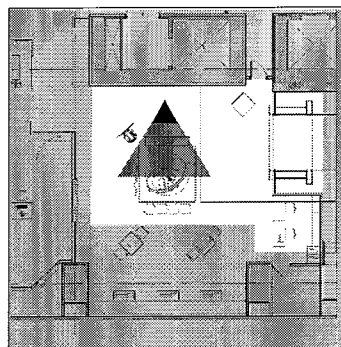
■ Action Summary

Mission	Send the high-tech artificial satellite into the orbit and transmit the data observed by the satellite necessary for each fields	
Operation Plan	Time	60min
	Participants	12p
	Staff	3p
	Area	287.04m² (86.8py)
Main Acting	Aerospace Engineer	Experience telecommunication artificial satellite transmission kit
	Info-Communication Technician	Analyze and transmission the Satellite observation data
	Pilot	Flight simulation

| Isometric



## &gt; SPACE \_ ELEVATION



## &gt; CONTENTS \_ Thai Aerospace Exploration project

## GiSTDA

**GiSTDA**

Established  
November 3, 2000

**Vision**  
Delivering Values From Space

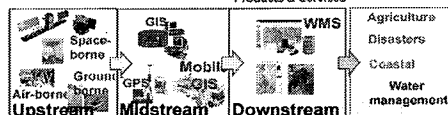
**Objective**  
Developing geo-informatics and space technology  
as a non boundary knowledge for the country development

**Role**

Data Acquisition

Processing & Model

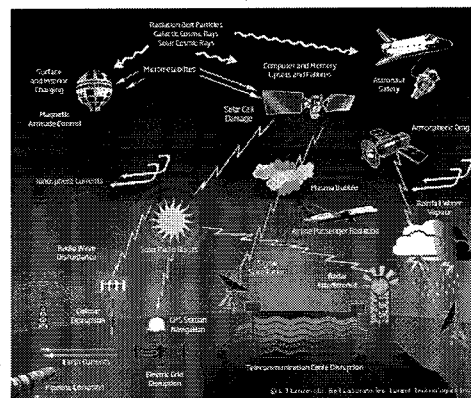
Solutions  
Products & Services



- Multi-platform Data Acquisition System: Space, Air, ground
- Integrated Value Delivery: Upstream, Midstream, Downstream

## &gt; SIGN\_Artificial Satellite Application Area

## GNSS(Global Navigation Satellite System)



Classification	Description
<b>Navigation (land, sea, air)</b>	<ul style="list-style-type: none"> <li>- Automated vehicle navigation (telematics), intelligent transportation systems (ITS)</li> <li>- Automated sea navigation and automatic alarm for danger zones</li> <li>- Automated air navigation and precise landing/take-off</li> </ul>
<b>National defense</b>	-Advanced weapons systems incl. combat planes, battleships, etc.
<b>Administration</b>	<ul style="list-style-type: none"> <li>- Geodetic, surveying and geographic information system</li> <li>- Emergency land, sea or air search and rescue</li> <li>- Positioning of and finding missing children</li> </ul>
<b>Information &amp; Communications</b>	<ul style="list-style-type: none"> <li>- Time synchronization of communications networks</li> <li>- Location-based service (LBS)</li> </ul>
<b>Other</b>	- Space geodetic, meteorological observation, resource exploration, leisure services, etc.

## 04 Cluster1 Job Experience

### — Aerospace Research Institute | Aerospace Engineer

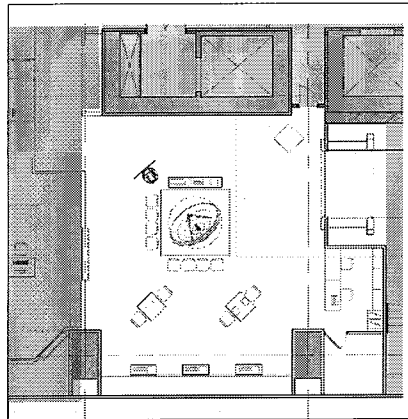
| Perspective



## 04 Cluster1 Job Experience

# Aerospace Research Institute | Aerospace Engineer

### | Partial Floor Plan



### ■ Main Item

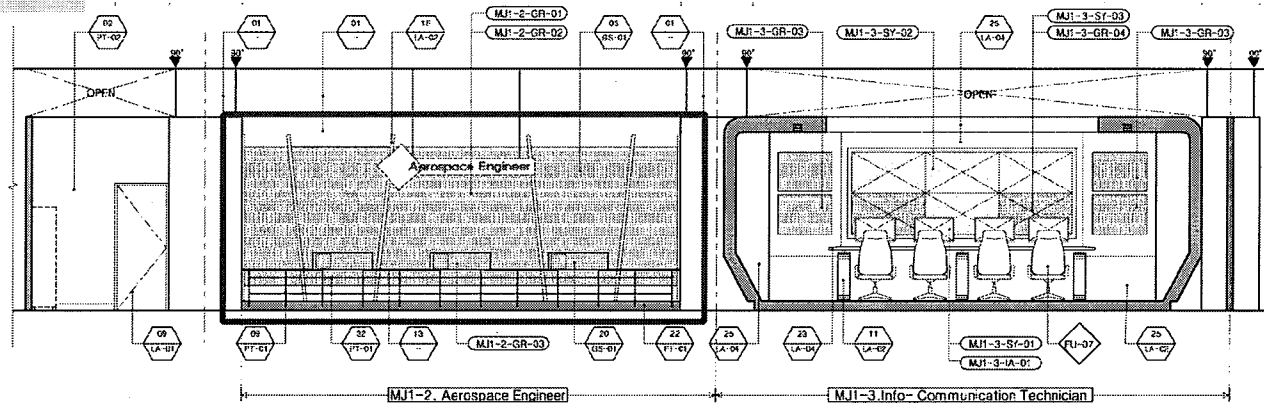
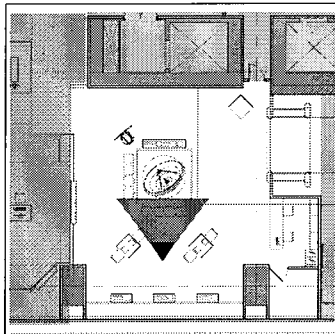
ITEM	QTY	IMAGE
Antenna And Satellite model	1 SET	

ITEM	QTY	IMAGE
Changeable antenna board kit	4 SET	

### ■ Experience Scenario

Time (min)	Aerospace Engineer		
	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>Introducing Thai Aerospace industry and main technology</li> <li>Introducing artificial satellite application area and TEHOS(Thai artificial satellite)</li> <li>Guide the jobs and their choice and then check the participant's uniform</li> <li>Introducing Mission and move to each job's experience room</li> </ol>	<b>1. Orientation (15min)</b> 1) take a class which is about Aerospace job information and various field which is related to Thai space Exploration project. 2) <b>Mission!! 'Send the high-tech artificial satellite into the orbit and transmit the data observed by the satellite necessary for each field'</b> →Reference the Thai artificial satellite THEOS. Understand that the Aerospace industry is the aggregation of whole science technology and the convergence industry. So we can understand that is really closely related to our practical life. 3) Take the basic information of Aerospace Industry's job(Aerospace Engineer, Info-Communication Technician, Pilot) and make a choice which job the participant going to choose . -> Choose what each participants want or randomly assign 4) Get each job's uniform(except for pilot) and move to experience room	Uniform/ Laptop/ Image Graphic Graphic sheet (Artificial satellite application area)
45	<ol style="list-style-type: none"> <li>Guide the participants move to Aerospace Engineer corner</li> <li>Explain about the types and observation principles of artificial satellite</li> <li>Introducing experience contents and process →Introducing how to use experience kit → Distribute the kits and guide the safety rules.</li> <li>Direct how to replace Antenna Control Box PCB</li> </ol>	<b>→Move to Aerospace Engineer corner</b> →Learn the types and the principles of artificial satellite and experience the communication with the Earth station through the Satellite and Antenna model. <b>1. Understand the types and the principles of artificial satellite(10m)</b> 1)Take a description about the types and application area of artificial satellite which is used for military, space exploration, telecommunication , weather observation and then find out actual cases. 2) Through the remote sensing which calculate the distance between GPS(Global Positioning System)satellite and GPS receiver, understand the satellite observation principles <b>2. Experience Artificial Satellite Telecommunication Kit (20min)</b> 1)Take a description about the telecommunication principles between the artificial satellite and Earth station. 2) For performing the mission process, take some equipment and experience it. →Deliver the EMERGENCY that there have some problem for transmission between the Artificial satellite and Earth station →Check the control box's malfunction → Practice replacing Antenna Control Box PCB <b>★ Replace Antenna Control Box PCB</b> 1) Check the manual about How to replace PCB and contents 2) Disassemble Antenna Control Box 3)Practice the radio kit chip and Control Box chip Pairing 4)check weather the pairing works well or not through the instrument 5) Reassemble the control box and mounting mini antenna for testing 6)Send the signal from the radio communication equipment to control box with mini antenna, check the telecommunication work well.	Satellite& Antenna working model (scale down)/ Changeable Antenna board kit/ Stand panel (Types of satellite) / Graphic Scasi (GPS Observation Principles)/ Directions
60	<ol style="list-style-type: none"> <li>Guide the participant's experience comment presentation</li> <li>Exhibit and introduce the Future Aerospace industry technology</li> <li>Guide the career information and university information</li> <li>Take a commemorate photo and give some notices. ※Arrangement the experience equipment and reset the system</li> </ol>	<b>1. Present experience comment (5min)</b> 1) Wrap-up the experience and gather the feedback room , present the each experience comment <b>2. Introduce future Aerospace industry(5min)</b> 1) Reference future Aerospace industry(Space food, Space material technology), listen the description about future development direction <b>3. Job Information\$ Commemorate photo</b> 1) Take some information about jobs and university which is related to Aerospace industry 2) Take a commemorate photo with colleague	Cutting Sheet (About the future Aerospace industry ) /Job info-guide PAPER / Camera

## &gt; SPACE \_ ELEVATION

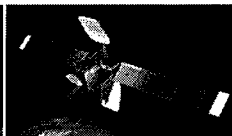


## &gt; Sign Types of satellites

## Classification according to the usage purpose



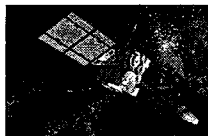
Military satellite



Space exploration satellite



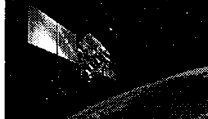
Communication Satellite



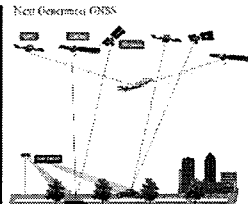
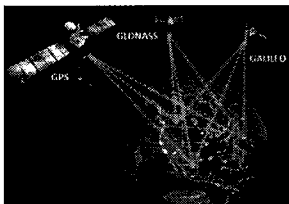
Meteorological satellite



Remote-sensing Satellite



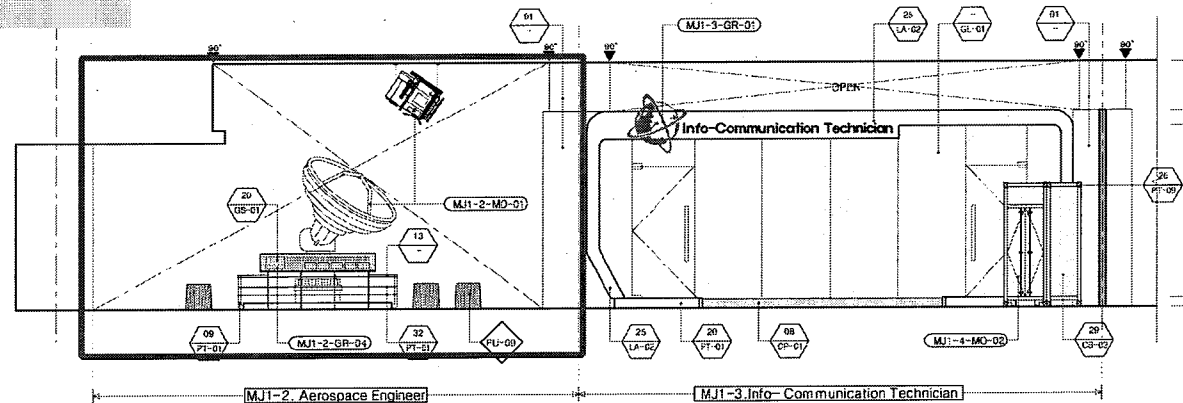
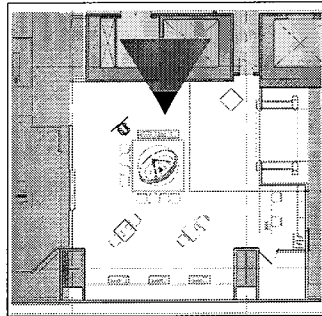
GPS satellite



Classification		Description
Practical satellites	Communications-broadcasting satellites	Information transmission (satellite broadcasting and phone, etc.)
	GPS satellites	Positioning on earth
	Earth observation satellites	Determining the conditions on earth
	Meteorological satellites	Observations of cloud movements and meteorological conditions
Scientific research satellites	Astronomy-planet observation satellites	Observation of space and research on specific planets
Military satellites		Acquisition of military and security information

**Aerospace Research Institute** | Aerospace Engineer

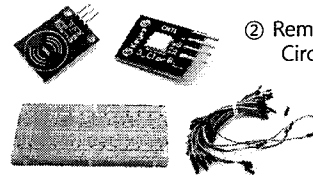
## > SPACE \_ ELEVATION



> Model\_Antenna board kit

**Artificial satellite+ Antenna model**  
**Assemble Direction**

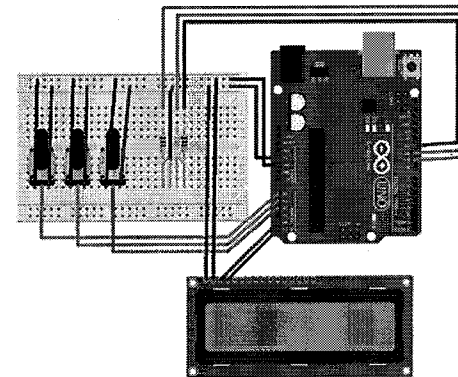
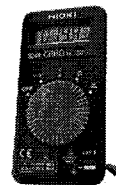
1. Disassemble Antenna control box
2. Practice pairing Control Box chip and Raid Kit Chip
3. Check
4. check weather the pairing works well or not through the instrument
5. Reassemble the control box and mounting mini antenna for testing
6. Send the signal from the radio communication equipment to control box with mini antenna, check the telecommunication work well



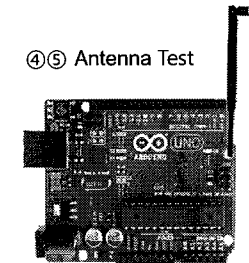
② Remote controller control kit/  
Circuit board



③ Instrument



④⑤ Antenna Test

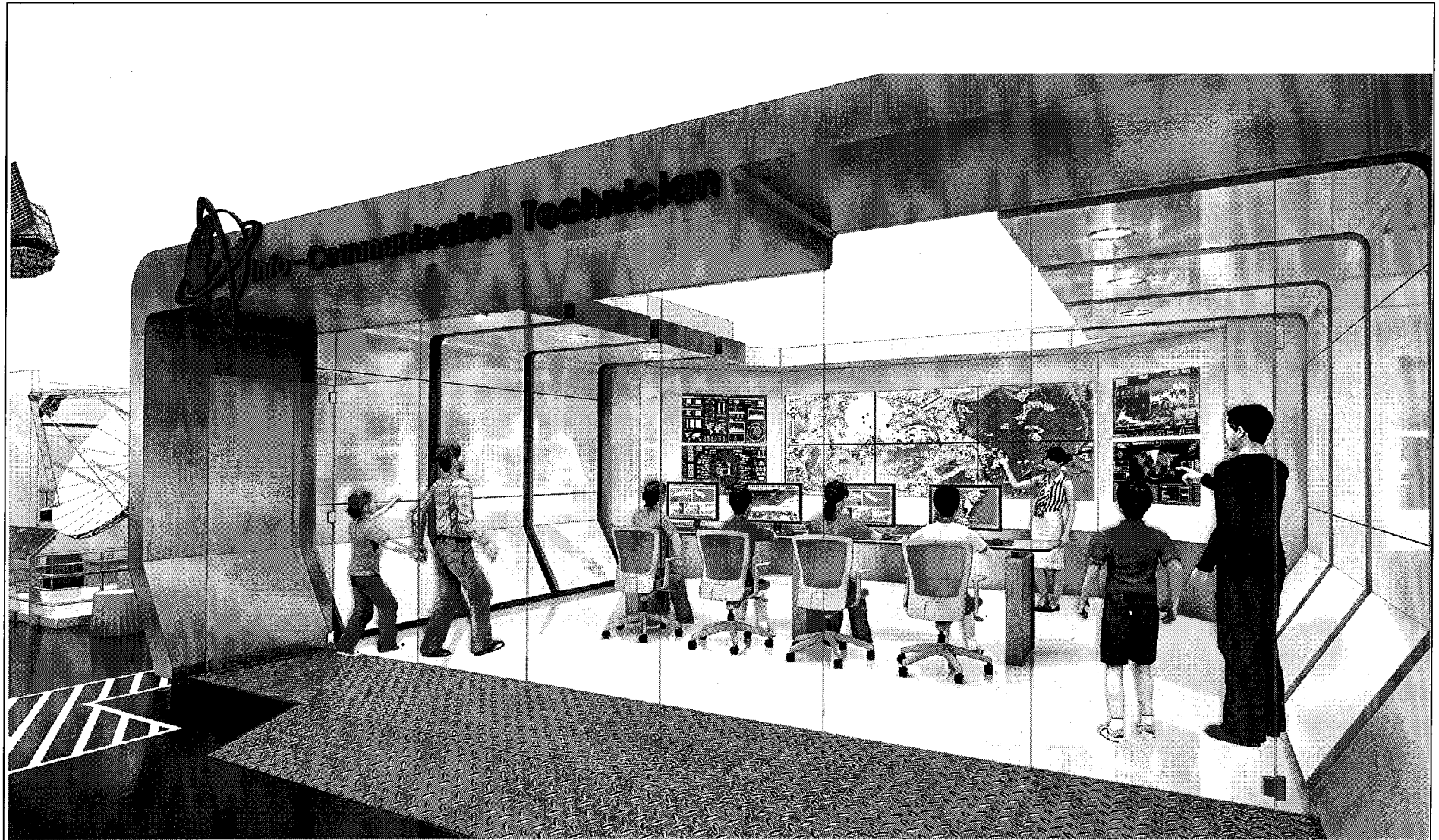


## Indexing

04 Cluster1 Job Experience

## — Aerospace Research Institute | Info-Communication Technician

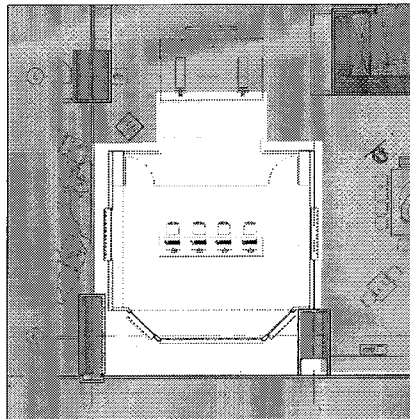
| Perspective



## 04 Cluster1 Job Experience

# Aerospace Research Institute | Info-Communication Technician

### Partial Floor Plan



### Main Item

ITEM	QTY	Image
DID monitor (interlocked with PC) +Lighting Sign	1 SET	

ITEM	QTY	IMAGE
Interactive PC(For information searching)	4 SET	

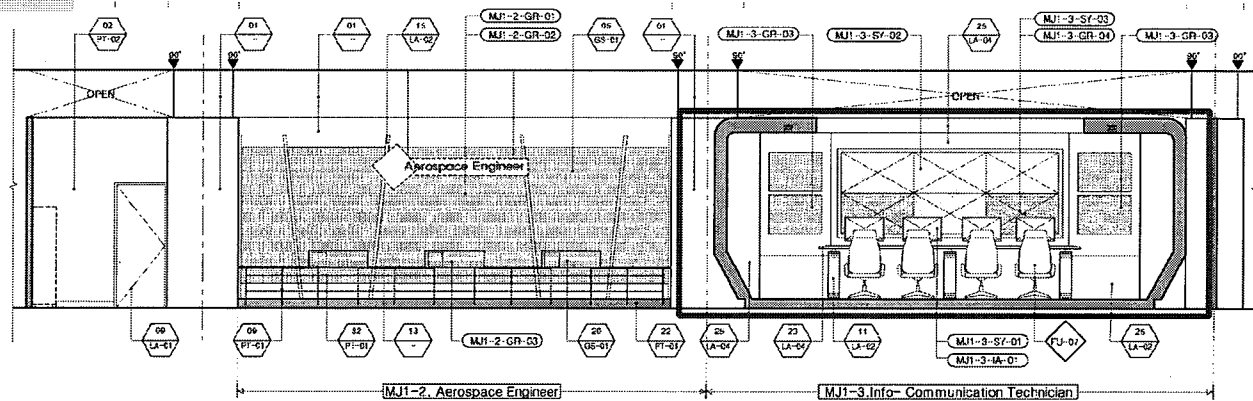
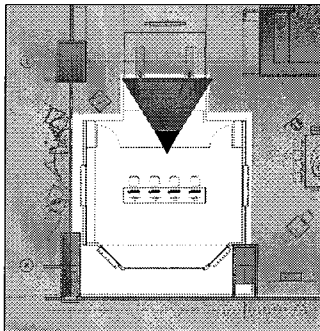
### Experience Scenario

Time (min)	Operating	Job Experience	Media
15	<p>1. Introducing Thai Aerospace industry and main technology</p> <p>2. Introducing artificial satellite application area and TEHOS(Thai artificial satellite)</p> <p>3. Guide the jobs and their choice and then check the participant's uniform</p> <p>4. Introducing Mission and move to each job's experience room</p>	<p><b>1. Orientation (15min)</b></p> <p>1) take a class which is about Aerospace job information and various field which is related to Thai space Exploration project.</p> <p>2) <b>Mission!! 'Send the high-tech artificial satellite into the orbit and transmit the data observed by the satellite necessary for each field'</b></p> <p>→Reference the Thai artificial satellite THEOS, Understand that the Aerospace industry is the aggregation of whole science technology and the convergence industry. So we can understand that is really closely related to our practical life.</p> <p>3) Take the basic information of Aerospace Industry's job(Aerospace Engineer, Info-Communication Technician, Pilot) and make a choice which job the participant going to choose . -&gt; Choose what each participants want or randomly assign</p> <p>4) Get each job's uniform(except for pilot) and move to experience room</p>	Uniform/ Laptop/ ImageGraphic Graphic sheet (Artificial satellite application area)
45	<p>1. Introducing GISTDA_DATA which is related to future Aerospace industry and artificial satellite</p> <p>→Introducing Thaichote(THEOS) Artificial satellite which can observe various sectors information and can monitor them</p> <p>→Explain how to read the satellite observation data of Each field's (Marine/Agriculture/ Soil / Disaster) and explain how to analyze it</p> <p>→Guide which data they going to choose for experience</p> <p>2. Guide to Analyze and synthesize each field's data and transmit to applicable agency.</p>	<p>→<b>Move to Info-Communication Technician Corner</b></p> <p>Analyze satellite observation data(marine/ agriculture / Soil / Disaster) transmitting the data which could be utilized and required in each field.</p> <p><b>1. Undersatnd and analyze the observation data(15min)</b></p> <p>1) Introducing GISTDA_DATA COLLECTION CENTER which have some responsible for future Aerospace industry after launching THEOS(Thailand Earth Observation System) at 2008.</p> <p>2) Take a description about the technology and monitoring system which is related to THEOS</p> <p>3) Take a description about Each field(marine/ agriculture/ Soil / Disaster)'s observation data manual.</p> <p>4) Check each field's data analyzing way, and choice 1field of 4.</p> <p><b>2. Transmit and classify sectorally utilized data(15min)</b></p> <p>1) Downloading each satellite observation data, check the satellite observation video image per cycle</p> <p>2) Analyze and synthesize each satellite observation video image, transmitting each agency for utilizing them.</p> <p>→Marine: Sea water temperature / Salinity / River inflow / Sea level / Chlorophyll concentration / Viewing distance underwater / Marine water quality / Red Tide Index Check → Ministry of Land, Transport and Maritime Affairs</p> <p>→Agriculture: Identify Areas and Yield forecast /Monitoring the crops / Check the natural disaster and pest damage</p> <p>⇒Ministry of Agriculture Forestry and Fisheries</p> <p>→Soil: Management city planning area / Large infrastructure Planning / Management Land use and Boarder / Monitoring forestry and logging / Pollution control ⇒City planning organization</p> <p>→Disaster: surveillance the Flood, drought, forest fires and other disaster / surveillance Geo-hazard /Response to Earthquake, landslide and tsunami/Oil spill prevention ⇒NDWC</p> <p>3) After transmitting Observation data, deliver the message about data transmission.</p>	Interactive SW Interactive PC/Monitor (for interactive and exhibition) /  Graphic scasi/ Graphic sheet/ Lighting sign (exhibit control center)/ Still Image (satellite observation images)
60	<p>1. Guide the participant's experience comment presentation</p> <p>2. Exhibit and introduce the Future Aerospace industry technology</p> <p>3. Guide the career information and university information</p> <p>4. Take a commemorate photo and give some notices.</p> <p>※Arrangement the experience equipment and reset the system</p>	<p><b>1. Present experience comment (5min)</b></p> <p>1) Wrap-up the experience and gather the feedback room , present the each experience comment</p> <p><b>2. Introduce future Aerospace industry(5min)</b></p> <p>1) Reference future Aerospace industry(Space food, Space material technology), listen the description about future development direction</p> <p><b>3. Job Information\$ Commemorate photo</b></p> <p>1) Take some information about jobs and university which is related to Aerospace industry</p> <p>2) Take a commemorate photo with colleague</p>	Cutting Sheet (About the future Aerospace industry ) /Job info-guide PAPER/ Camera

## 04 Cluster1 Job Experience

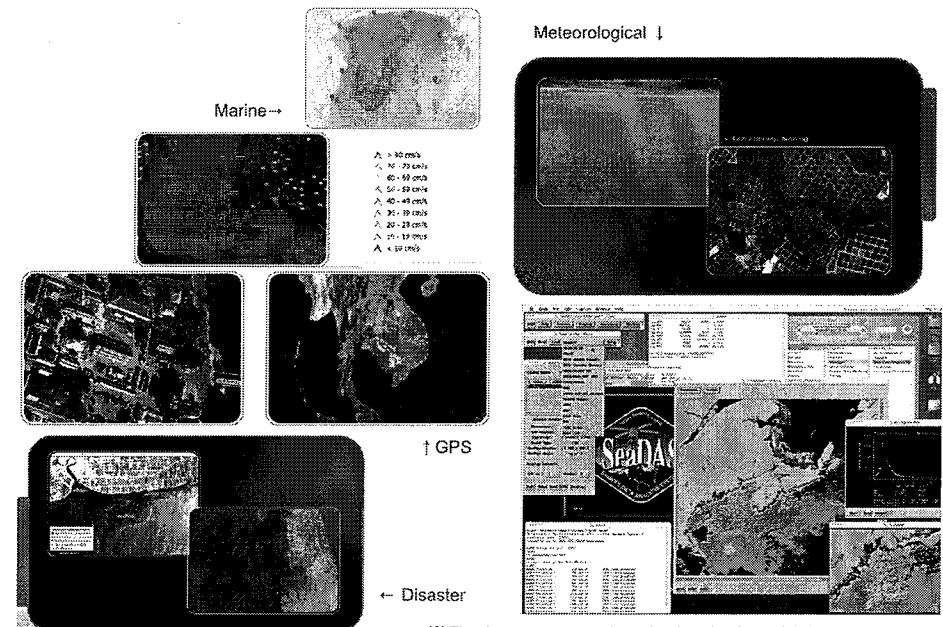
### — Aerospace Research Institute | Info-Communication Technician

#### > SPACE \_ ELEVATION



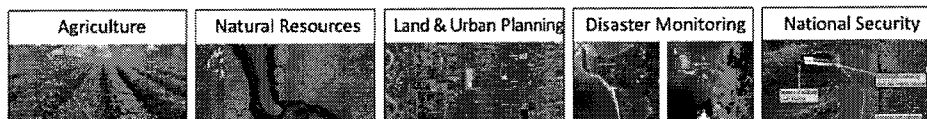
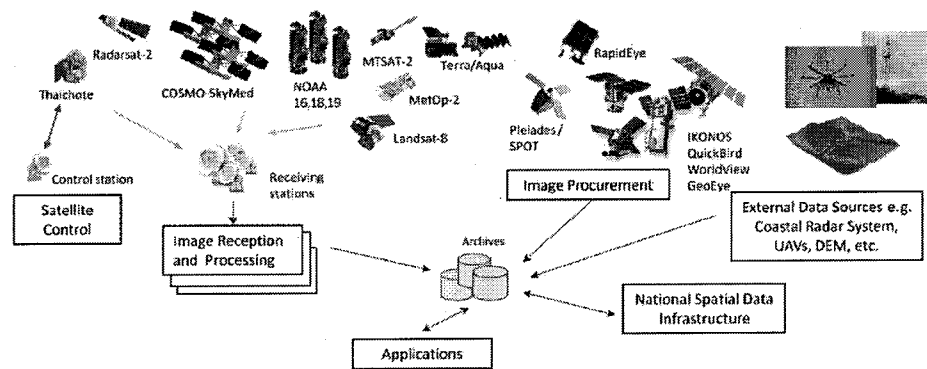
#### > Interactive Satellite observing data

Item	Satellite observing data	Time	within 3 minutes
Production Formats	PC monitor data output + keyboard insert transmission		
H/W	PC/22"monitor/keyboard/mouse/ speaker *4set		
Summary of Direction	> Experience transmitting data necessary for business fields by using the satellill observation data (Weather, geography, disaster, marine etc.)		
Contents of Direction	Screen Display		
	STEP 1	Understand the various types of artificial satellite and select the artificial intelligence of interest	
	STEP 2-1	Transmit the observation data of the artificial satellite chosen by the visitor necessary for business fields	Transmit the marine observation satellite data to the marine organization >Sea water temperature, salinity, stream inflow quantity, sea surface level, chlorophyll concentration, water visibility, sea water quality grade, red tide index etc.
	STEP 2-2		Transmit the navigation satellite (GPS satellite) data to the traffic organization
	STEP 2-3		Transmit the meteorological satellite data to the meteorology observation post >Transmit the infrared video data and the radar video data
	STEP 2-4		Transmit the remote-sensing satellite data to the disaster countermeasure organization >Countermeasure on climate change and disaster through disaster observation of the Earth and post monitoring
	STEP 3	Check the transmission result	



## > CONTENTS \_GIS System

(GPIS : Geographic Positioning Information System)



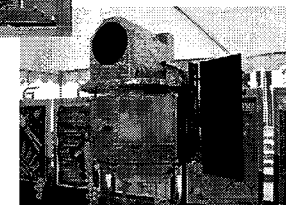
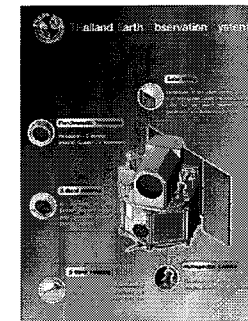
### Geography Information System (GIS)

A complex geography information system capable of gathering relevant information such as underground facilities along with geography information such as general maps using the artificial satellite, recording them using computers for search and analysis. Its necessity in the fields of territory planning, city planning, water resource management, communication and transportation network hypothesis, land management, underground utilities and others is being emphasized.

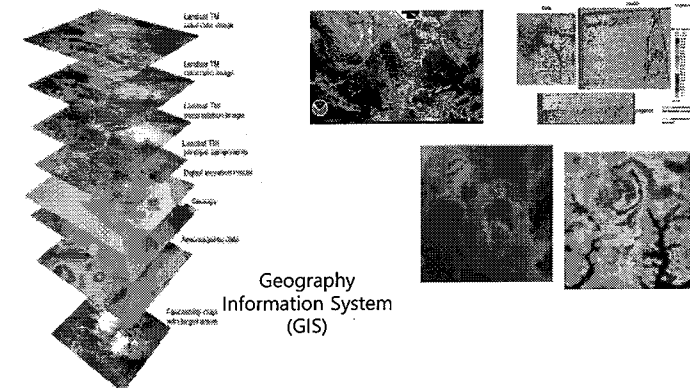
Fields applied with GIS include aeronautical meteorological information analysis, water and sewage network, communication network, power network, city gas network, installation and management of ground and underground facilities, plant site, crop cultivation region, assigning industrial complexes and others in detail.

### 'Thaichote' (THEOS)

From early 1980s, Propelled the Artificial satellite information and GIS utilize After 1982 with the U.S.A's help, establish LANDSAT satellite data receiving station, Utilize it receiving USA, Canada, Europe, Japan and other country's satellite observation data. At 2008, Thai ordered to Europe company Astium and launch the satellite No.1 through THEOS-1(Thailand Earth observation system) program



### Satellite Observing Data



Analyzes data observed by the satellite (weather/agriculture/territory/geology/military) and sends data to be utilized in each field

04 Cluster1 Job Experience

— Aerospace Research Institute | Pilot

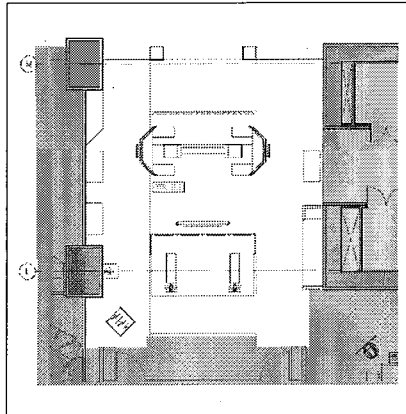
| Perspective



## 04 Cluster1 Job Experience

# Aerospace Research Institute | Pilot

### | Partial Floor Plan



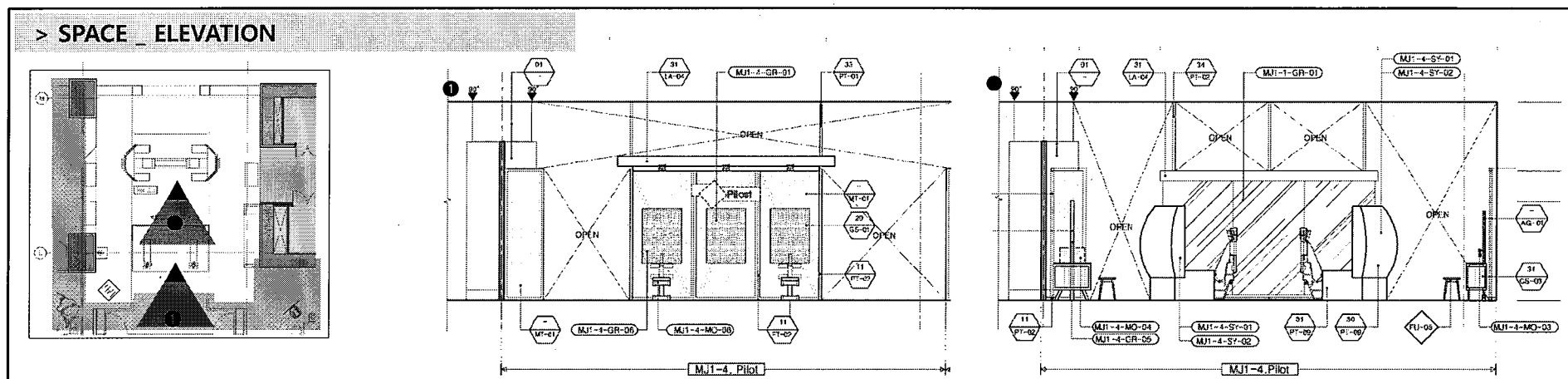
### ■ Main Item

ITEM	QTY	Image
Physical test equipment	1 SET	
Flight simulation (including sw)	2 SET	
Pilot Uniform (Hat/Tie/Jacket)	4 SET	

### ■ Experience Scenario

Time (min)	Operating	Pilot Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Introducing Thai Aerospace industry and main technology</li> <li>2. Introducing artificial satellite application area and TEHOS(Thai artificial satellite)</li> <li>3. Guide the jobs and their choice and then check the participant's uniform</li> <li>4. Introducing Mission and move to each job's experience room</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Orientation (15min)</b> <ol style="list-style-type: none"> <li>1) take a class which is about Aerospace job information and various field which is related to Thai space Exploration project.</li> <li>2) <b>Mission!! 'Send the high-tech artificial satellite into the orbit and transmit the data observed by the satellite necessary for each field'</b> <ul style="list-style-type: none"> <li>→Reference the Thai artificial satellite THEOS, Understand that the Aerospace industry is the aggregation of whole science technology and the convergence industry. So we can understand that is really closely related to our practical life.</li> </ul> </li> <li>3) Take the basic information of Aerospace Industry's job(Aerospace Engineer, Info-Communication Technician, Pilot) and make a choice which job the participant going to choose . → Choose what each participants want or randomly assign</li> <li>4) Get each job's uniform(except for pilot) and move to experience room</li> </ol> </li> </ol>	<p>Uniform/ Laptop/ ImageGraphic Graphic sheet (Artificial satellite application area)</p>
45	<ol style="list-style-type: none"> <li>1. Introduce about Pilot and explain experience process Physical test- Put on the uniform -- Introduce the flight simulation →Explain the physical criteria of pilot , distribute the physical test record paper and explain how to record it →Checking the physical test process, explain safety rule →After physical test, move to uniform corner.</li> <li>2. Explain uniform standardization policies, take on and check the uniform →After take on uniform, Guide the participants move to simulator</li> <li>3. Explain the simulation manual, dashboard direction, flight safety rules. →Explain the precautions when A/B team rotate → Explain the process [Take Off → Flight → Landing]</li> </ol>	<p>→<b>Move to Pilot corner</b> -Experience the physical test and flight simulation to become a veteran pilot</p> <ol style="list-style-type: none"> <li>1. <b>Pilot Physical Test (10min)</b> <ol style="list-style-type: none"> <li>1)Move to pilot corner, take a description about pilot and experience contents → buddy system</li> <li>2) Reference the criteria of physical test explanation panel and get a physical test record paper</li> <li>3) Singing each owns paper, record the whole 6 test results → Height/Weight→ Blood pressure → Spirometry → Eyesight→ Hearing ability → Sit-up <u># Check the physical test result, move to uniform corner</u></li> </ol> </li> <li>2. <b>Take on Pilot Uniform (5min):</b> <ol style="list-style-type: none"> <li>1) Receive the Pilot uniform(hat, jacket, tie) and listen how to wear the uniform</li> <li>2)Check owns uniform looking at the mirror <u># Wearing the uniform, wait in front of the simulation corner</u></li> </ol> </li> <li>3. <b>Flight simulation (5/5/5min)</b> <ol style="list-style-type: none"> <li>1) Listen how to use the simulation → A/B team (buddy system) Alternately experience</li> <li>2) A Team: Sit on the simulator → Put on the headset → Start the simulation B Team :Observation and learning through A Team 's experience (5min) and then rotate with B Team</li> </ol> </li> </ol>	<p>Physical test Equipment (height &amp; weight/ eyesight/hearing ability/ blood pressure/ sit-up/slirometry/ Graphic sheet (how to use the Equipment)/ Physical test record paper</p> <p>Pilot uniform / mirror Flight simulation(sw)/</p> <p>Direct the cockpit (dashboard /joystick/ monitor)</p> <p>Graphic sheet (criteria of physical test)</p>
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Exhibit and introduce the Future Aerospace industry technology</li> <li>3. Guide the career information and university information</li> <li>4. Take a commemorate photo and give some notices. ※Arrangement the experience equipment and reset the system</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Present experience comment (5min)</b> <ol style="list-style-type: none"> <li>1) Wrap-up the experience and gather the feedback room , present the each experience comment</li> </ol> </li> <li>2. <b>Introduce future Aerospace industry(5min)</b> <ol style="list-style-type: none"> <li>1) Reference future Aerospace industry(Space food, Space material technology), listen the description about future development direction</li> </ol> </li> <li>3. <b>Job Information\$ Commemorate photo</b> <ol style="list-style-type: none"> <li>1) Take some information about jobs and university which is related to Aerospace industry</li> <li>2) Take a commemorate photo with colleague</li> </ol> </li> </ol>	<p>Cutting Sheet (About the future Aerospace industry)/ Job info-guide Paper/ Camera</p>

**Aerospace Research Institute** | Pilot



### > SIGN Criteria Of Physical Requirements Of Pilot

### Age Requirements

The U.S. and Canadian governments have established minimum and maximum ages for airline pilots. A private pilot must be at least 17 years of age, a commercial pilot at least 18, and an applicant for an air/airline transport pilot certificate at least 21 in Canada and 23 in the United States. Federal law in the United States requires airline pilots to retire at age 65; there is no such limit in Canada, but the retirement age on scheduled airlines changed in December 2007 from age 60 to age 65.

## Education

The commercial airline pilot profession increasingly becomes more complex and technical. Meeting the constant demands of continuously changing technology requires a high degree of mental dexterity. Airline pilots never stop learning—new systems, new aircraft configurations, new procedures, etc. Because of the ever-changing aviation technology and the requirements for mastery of new systems, pilots must attend and pass ground school courses regularly, as well as passing flight checks in simulators and aircraft. If you want to work in this technically complex environment, with navigation systems and communications equipment, you need a thorough grasp of mathematics, aeronautics, navigation, and meteorology.

You must also think clearly even in times of stress, and communicate accurately, understandably, and concisely while performing other duties. The acquisition of these skills begins at the secondary level of education with an emphasis on the basic sciences, particularly math and physics. At the college/university level, preferred courses in preparation for an airline pilot career would include advanced math, English, sciences, aeronautical engineering, and other aviation-related studies.

### **Physical/Health Requirements**

**Physical Requirements:** Because of the unique physical demands of a pilot's daily duties, regulatory agencies require that pilots meet strict health standards, primarily concerning the heart, lungs, physical dexterity, and eyesight (although now, most airlines will allow applicants to wear glasses to correct vision to 20/20 in each eye). Dependence on drugs—even prescription drugs—may be disqualifying. The Federal Aviation Administration requires medical certificates, classified as First, Second, or Third Class, while Transport Canada requires Category 1 or Category 3 certificates. (Category 2 is for air traffic controllers and flight engineers, although the physical requirements for a flight engineer are similar to those of Category 1 to account for prolonged or difficult flights). Each class or category includes specific physical requirements.

The First Class and Category 1 certificates have the highest standards and are required for an airline transport pilot certificate. The First Class Certificate is valid for six months, while the Category 1 Certificate is valid for one year for pilots under age 40, and six months for those aged 40 and older.

Before you begin training for any airline position, schedule a First Class or Category 1 physical from a designated FAA or Transport Canada examiner. You can obtain the names of such examiners from the FAA or Transport Canada regional headquarters nearest you or you can ask the operator of any approved flight training school in your area.

> **SIGN Work Paper**

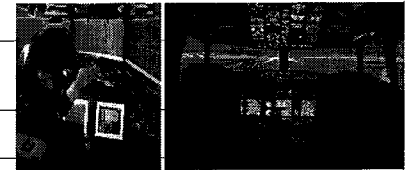
PHYSICAL EXAMINATION FOR PILOTS		
FULL NAME	DATE OF BIRTH	SEX
		<input type="checkbox"/> Male <input type="checkbox"/> Female
HEIGHT	WT	WEIGHT
VISIONS	Right eye Left eye	COLOR SENSE
HEARING	Right ear Left ear	BLOOD PRESSURE
LUNG CAPACITY		
NUMBER OF SLIPERS		
COMMENTS		
DATE OF EXAMINATION	EXAMINER'S SIGNATURE	PILOT'S SIGNATURE

※ The above contents are planned and can be changed during the design process

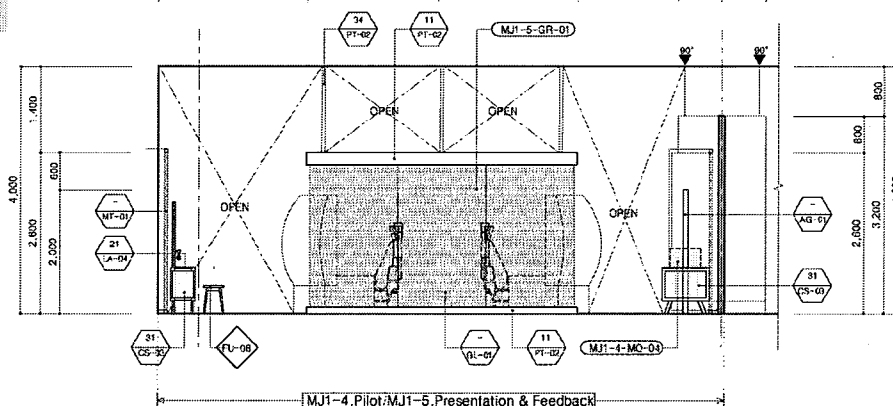
## &gt; Interactive

## Flight simulation Scenario

Item	Flight simulation	Time	within 10 minutes
Production Formats	Multi vision and joystick connection method		
H/W	multi vision 46"monitor * 3ea + 2 ea of joysticks		
Summary of Direction	> To utilize the joystick in a flight simulation for take-off, overcoming obstacles, bad weather, traffic and emergency situations		
Contents of Direction	Screen Display		Screen composition
	STEP 1	Select aircraft-airport-mission >Display the region's climate and natural environment of the current aircraft position	SW : 1 interactive video (experience joystick maneuver) (*Language ver – 1 THAI) TST HW : 1 set of (3 ea of 46" monitor+2 ea of Logitech wingman extreme flight joystick) 1set * Fly the aircraft by moving the joystick(Up, down, left, right maneuver & button selection) : usb type * Produce 3D graphic / within 10 minutes (3D production of approximately 5~7 minutes)  ▶ Things to check ① Start : 2.5D (20")  ② Prepare flight : 2.5D (60") ▷ Main pilot/co-pilot's mission accomplishment (Check maneuver button etc.) ③ Start→accelerate→runway→take off : 2.5D (60") ▷ Interactive such as main pilot/co-pilot's take off button maneuver etc. ④ Flight mode : 3D (180") ▷ Fly by changing direction ⑤ Event : 3D (90") ▷ Events occurring such as climate changes like cloudy weather, hail and others ⑥ Prepare landing : 2.5D (60") ▷ Main pilot/co-pilot's mission accomplishment ⑦ Land : 2.5D (60") ▷ Interactive such as main pilot/co-pilot's take off button maneuver etc. ⑧ End experience : 2.5D (20")
	STEP 2	Take-off after sign by utilizing the joystick >Depart after receiving the control tower's sign for take-off→accelerate→runway→take-off	
	STEP 3	Event 1. Overcome obstacles such as a flock of birds after a peaceful natural environment	
	STEP 4	Event 2. Realize traffic by AI aircraft >Receive the control of the ATC (Air Traffic Control) for flying and changing altitude	
	STEP 5	Event 3. Experience emergency situation such as bad weather like wind-rainstorm +fuel leak-engine failure and others	
	STEP 6	Message on the result of executing landing + mission	



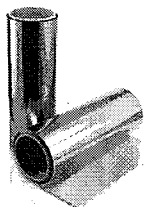
— Aerospace Research Institute | Presentation And Feedback



## Space food



## Space material

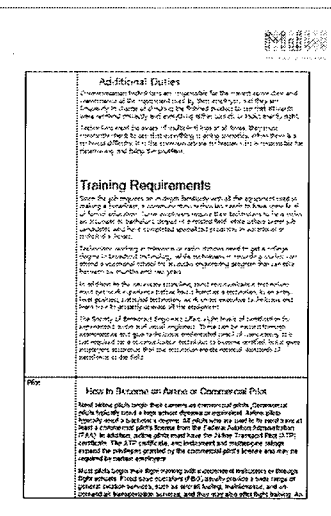
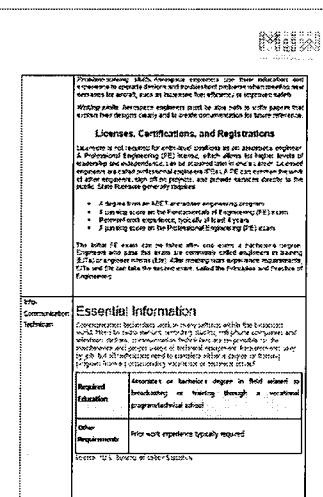
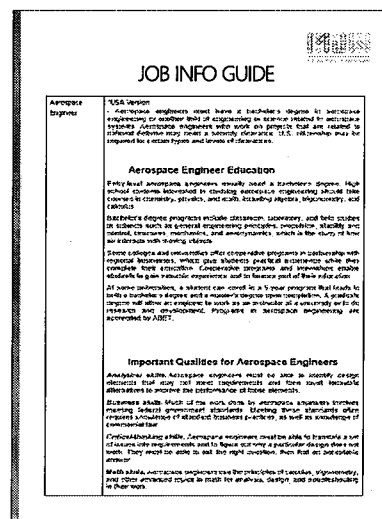


KAPTON  
– (Polyimide Film)



## Nylon 66

> **SIGN\_Job Info-guide Paper**

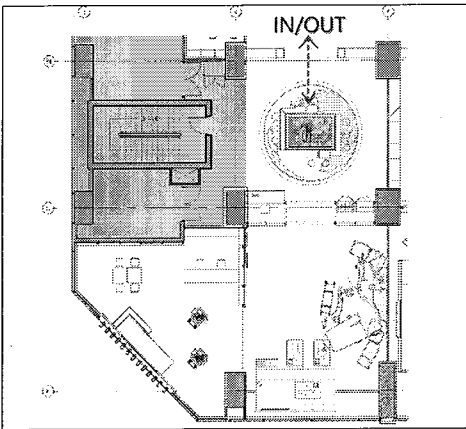


※ The above contents are planned and can be changed during the design process

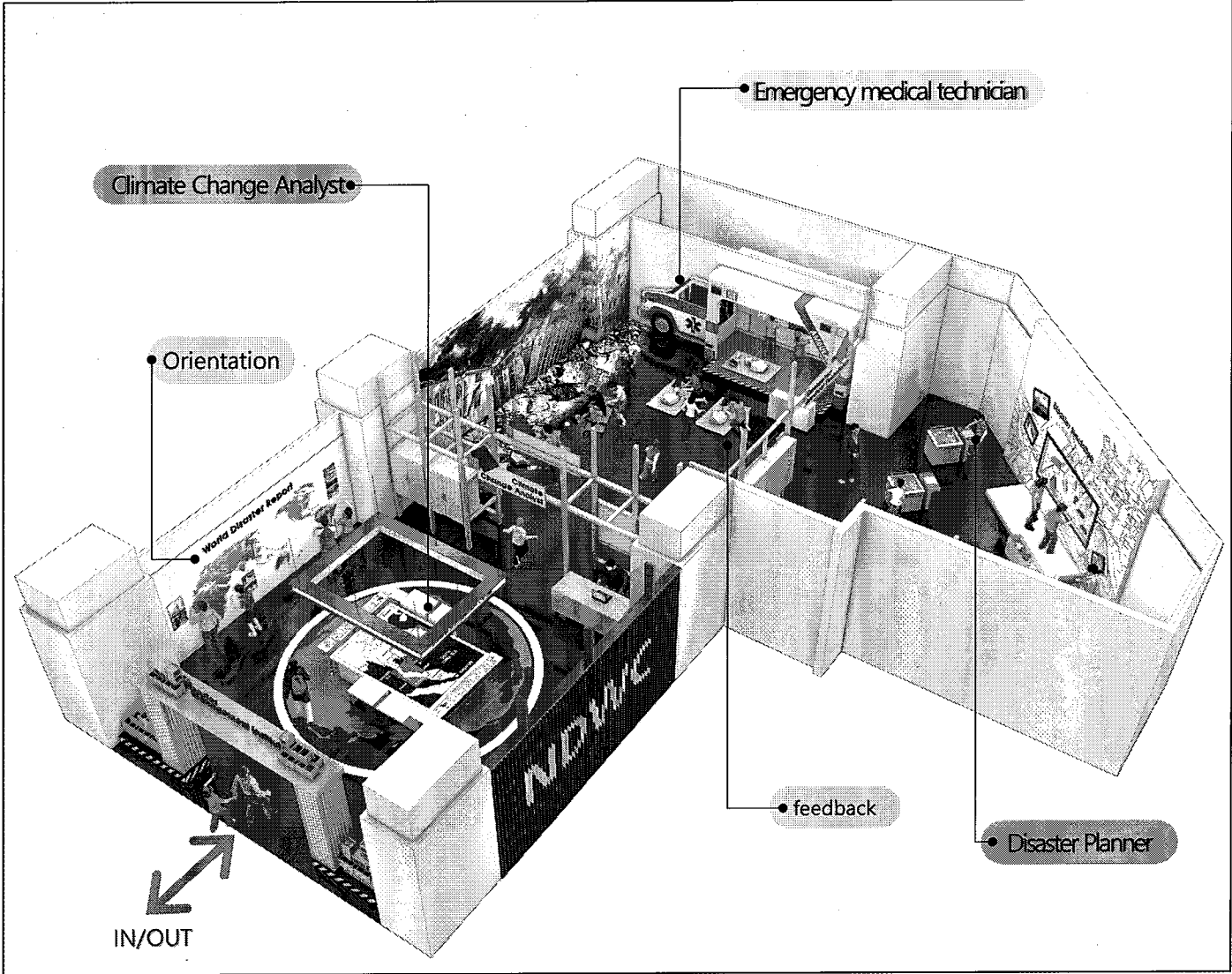
05 Cluster1 Job Experience

— Disaster Management Institute

| Floor Plan



| Isometric



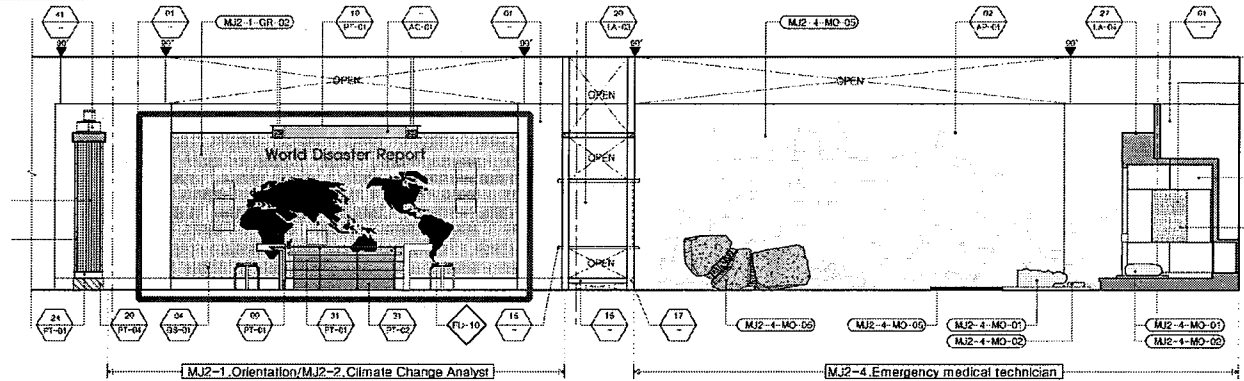
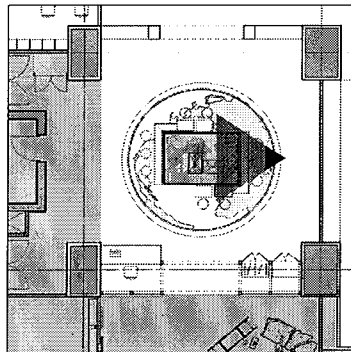
■ Action Summury

Mission	Prepare for future disaster and , cultivate the capacity that respond to the EMERGENCY situation	
Operation Plan	Time	60min
	Participants	12p
	Staff	3p
Main Action	Area	245.17m <sup>2</sup> (74.2py)
	Climate Change Analyst	Analyze the annually changed climate, fill the disaster forecast report
	Disaster Planner	Fill the evacuation manual depending on Each specific situation
	Emergency medical technician	Experience First Aid Kit

## 05 Cluster1 Job Experience

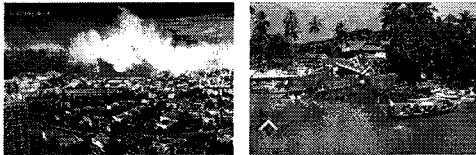
### — Disaster Management Institute | Orientation

#### > SPACE ELEVATION



#### > SIGN\_World Map Graphic / Domestic and foreign disaster cases

##### <Domestic>

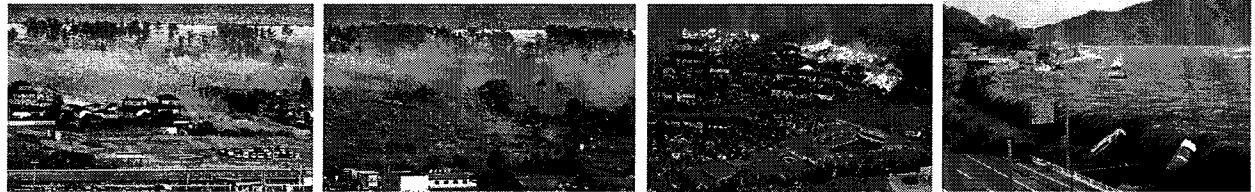


< 2004 Tsunami In Thailand>



< 2011 Bangkok Flood >

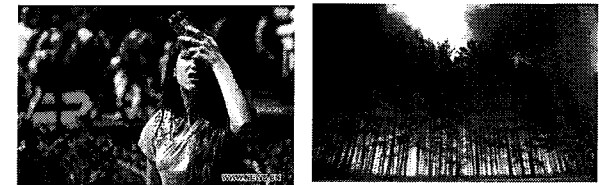
##### <Foreign>



< 2011 Earthquake in East Japan>



< 2008 Earthquake In China >



< 2010 Russia Heatwave and Wildfire >

## > CONTENTS NDWC (National Disaster Warning Center)

→

### 6.2 대륙

#### 6.2.1 태국의 재난관리시스템

##### 가. DDPM

태국의 재난관리청은 내각부 산하의 DDPM(Department of Disaster Prevention and Mitigation)에 주관하고 있다.

##### 나. 주요 업무

1) 국내외 안전을 도모하기 위해 화재예방, 범죄예방, 재난 방지 업무 수행  
2) 국내외 재난예방 정책제정, 비상대응 활동 지원  
3) 재난예방 및 대응, 재난구호 활동 및 관리, 안전 관리 활동 및 교육  
4) 화재 예방 및 화재조사 업무  
5) 화재 예방 및 대응 활동을 위한 위 자치단체 행정 지원 시스템 구축

##### 다. 중점사업

• NDWC(National Civil Defense Committee)에서 전국적 화재 관리 수행

##### 라. 지역관리

• 각 지역의 화재예방을 담당하기 위해 RDWC(Regional Disaster Prevention and Mitigation Center) 운영

#### 6.2.2 태국의 조기경보시스템

태국의 조기경보시스템 체계는 다음 그림과 같다.

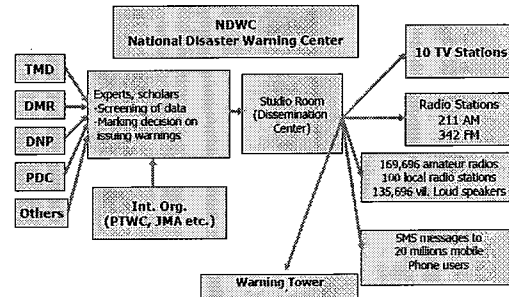


그림 6.9 태국의 조기경보시스템 체계도

여기서

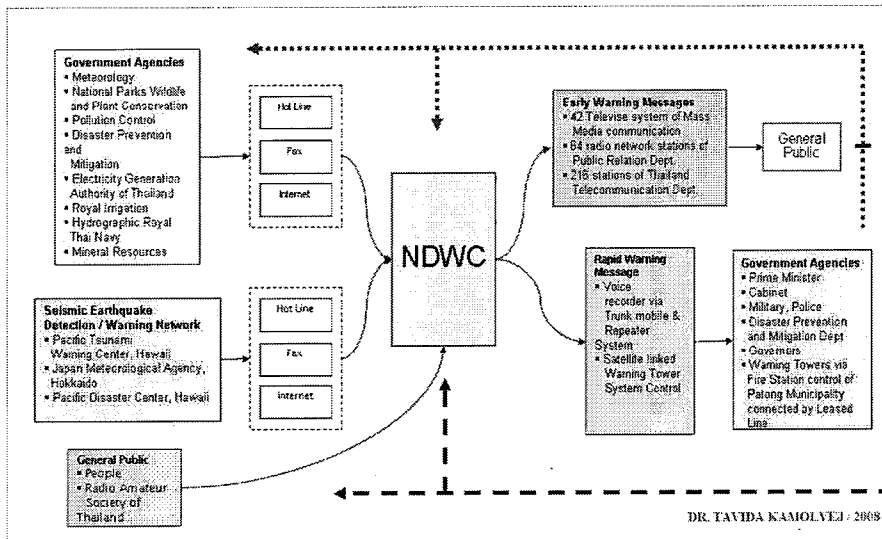
TMD: Thai Meteorological Department (태국 기상부)

DMR: Department of Mineral Resources (자원부)

DNP: Department of National Park (국립공원부)

PCD: Pollution Control Department (환경부)

## → Thailand National Disaster Warning Center



DR. TAVIDA KAMOLVEJ / 2008



05 Cluster1 Job Experience

## — Disaster Management Institute | Climate Change Analyst

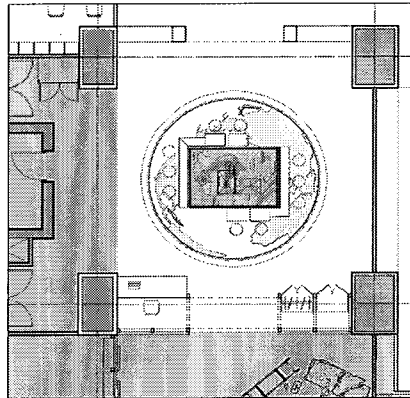
| Perspective



## 05 Cluster1 Job Experience

# Disaster Management Institute | Climate Change Analyst

### | Partial Floor Plan



### ■ Main ITEM

ITEM	QTY	IMAGE
Thai Map (Lighting Panel)	1 SET	

ITEM	QTY	IMAGE
Monitor/Video (climate change image)	2EA	

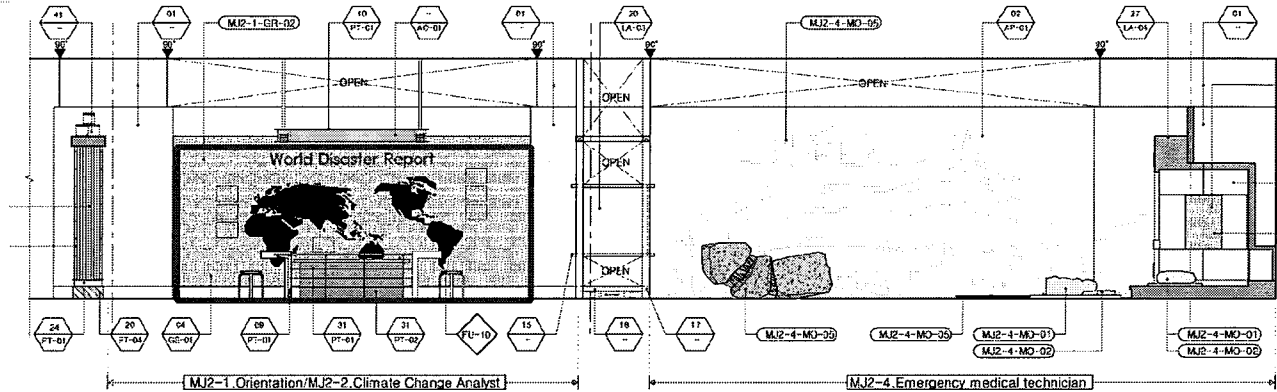
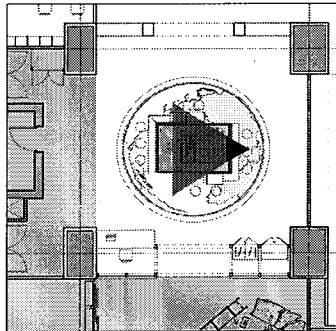
### ■ Experience Scenario

Time (min)	Climate Change Analyst		
	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Explain the necessity of the preparation of disaster, NDWC which is warning system and Disaster Management Institute</li> <li>2. Introduce the domestic and foreign disaster cases, explain the mission → Guide the debate about how to reinforce the disaster preparedness capacity</li> <li>3. Explain experience contents and guide to which job the participants going to choose</li> <li>4. Get each job's uniform and move to experience room</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Orientation (15min)</b> 1) Listen the explanation about the necessity of preparedness for disaster, the NDWC (National Disaster Warning Center) and Disaster countermeasure research field.</li> <li>2) <b>Mission!! "Prepare for the future disaster and cultivate the capacity that respond to the EMERGENCY situation"</b> → Reference the disaster case images on the World map graphic wall, talk about How to deal with the big disaster as soon as possible.</li> <li>3) Make a basic introduction of disaster management institute jobs (Climate Change Analyst, Disaster Planner, Emergency medical technician) and make a choice which job the participants going to choose → Choose what each participants want or randomly assign</li> <li>4) Get each job's uniform and move to experience room</li> </ol>	Uniform/ Laptop/ Image graphic (World map)/ Graphic Sheet (Actual disaster case image)
45	<ol style="list-style-type: none"> <li>1. Move to Climate Change Analyst experience room, make a buddy system.</li> <li>2. Guide how to check the Lighting Panel Map</li> <li>3. Through the 2011 Bangkok flood case, explain the reason with climate change factor and geographic factors</li> <li>4. Explain how to analyze the Map monitor video</li> <li>5. Guide how to predict the flood</li> <li>6. Guide how to fill the forecast paper</li> </ol>	<p>⇒ <b>Move to Climate Change Analyst Corner</b> → Analyzing annually changed climate data, Predict the future disaster's occurrence and region.</p> <ol style="list-style-type: none"> <li>1. <b>Analyze annual climate change image (10min)</b> 1) Making a buddy system, check the lighting panel map focusing on Thailand. 2) Take an explanation about the cases, characteristic, area and related status through the actual case. → Analyze and understand through annually changed climate graphic image pre and post 2011 Bangkok flood</li> <li>2. <b>Predict the time and region of future flood (Sea-level rise) (15min)</b> 1) reference the image video on the Map monitor, Listen how to analyze that information 2) Predict future flood time and region according to the sea-level rising and land loss reference the Map monitor</li> <li>3. <b>Fill the forecast report (5min)</b> 1) Fill the forecast report using the data that the participants analyzing</li> </ol>	Video SW (Annually changed climate image video)/ monitor (built-in the table)/ Lighting Panel (Thai Map)/ Image graphic (floor)/ Work Paper (Forecast report)
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Explain the disaster rescue equipment and direction</li> <li>3. Guide the career and university information</li> <li>4. Take a commemorative photo and give some notices. ※ Arrangement the experience equipment and reset the system</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Present Experience comment (5min)</b> 1) Wrap-up the experience and make some presentation about how the participants overcome the disaster</li> <li>2. <b>Explain disaster relief tools and testing them (5min)</b> 1) Display disaster relief tools, explain how to use them and experience the equipment</li> <li>3. <b>Job Information &amp; Commemorate photo (5min)</b> 1) Take some information about jobs and university information which is related to disaster management field 2) Take a commemorative photo with colleague</li> </ol>	Disaster relief tools / Graphic panel + moving panel / Job Info-guide Paper/ Camera

## 05 Cluster1 Job Experience

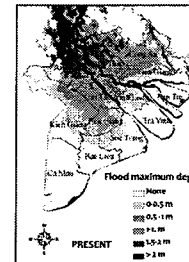
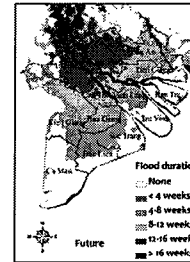
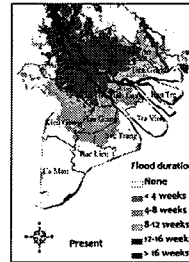
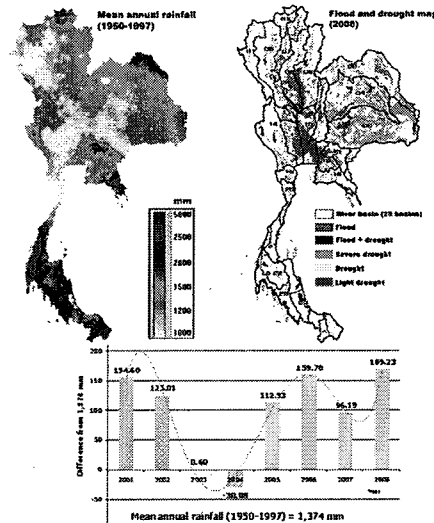
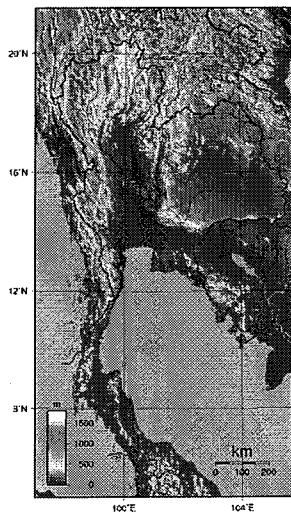
### Disaster Management Institute | Climate Change Analyst

#### > SPACE\_ELEVATION



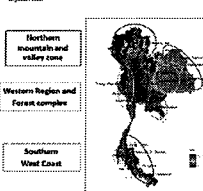
#### > SIGN\_Thai Map Lighting Panel/Graphic

##### \_Thai Climate Change Map



simulated change in the flooded duration in the Mekong Delta in the future, compared to the present day

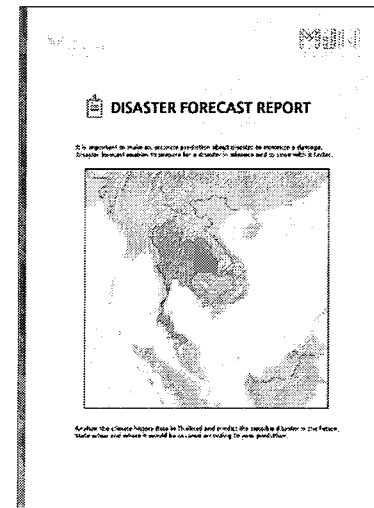
Source: IAP FCM



Region	Current climate	Future climate (Average during 2045-2050)		
		Upper range	Lower range	Median
Northern mountains and valley	1,355 mm	1,189 mm	720 mm	1,119 mm
Central plain and Chao Phraya River basin	1,895 mm	1,829 mm	858 mm	1,216 mm
Western region	1,711 mm	1,865 mm	809 mm	1,203 mm
Mekong River basin	1,817 mm	2,225 mm	1,543 mm	1,894 mm
Southern region	1,699 mm	1,354 mm	756 mm	1,056 mm
Eastern region	2,224 mm	2,335 mm	1,775 mm	2,341 mm
Lower Gulf of Thailand coast	1,817 mm	1,805 mm	1,318 mm	2,043 mm
Lower Andaman coast - Phuket	2,764 mm	2,417 mm	1,846 mm	2,453 mm

#### > SIGN\_Work Paper

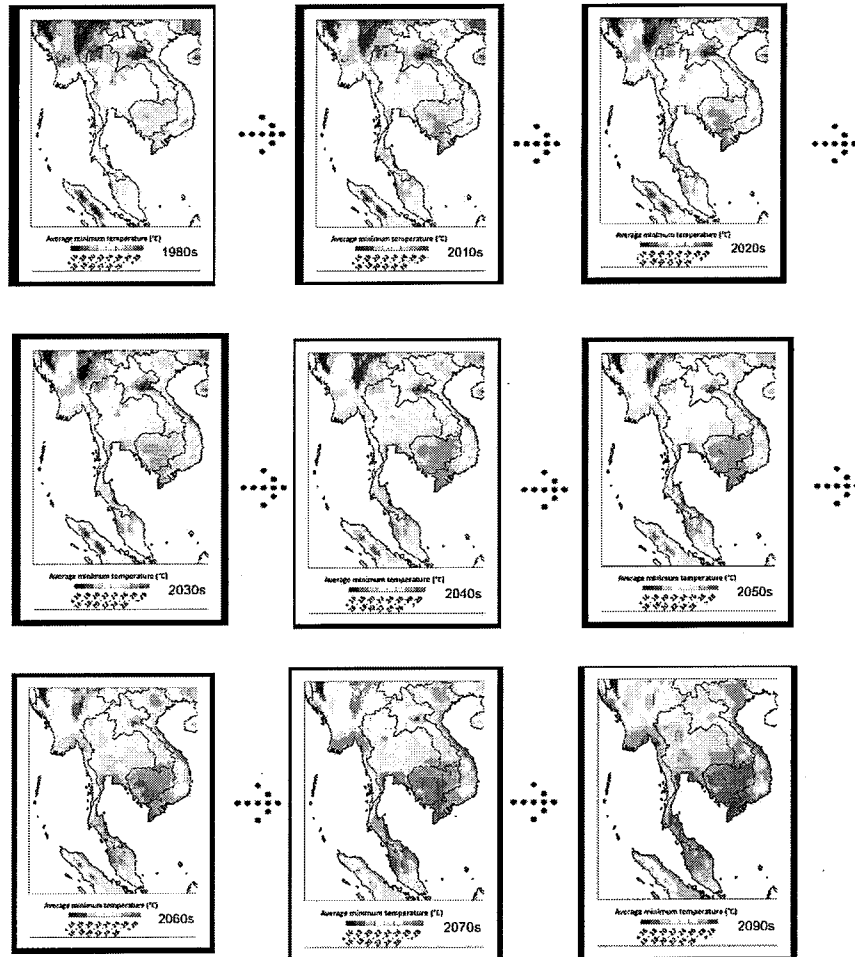
##### \_Disaster Forecast Report



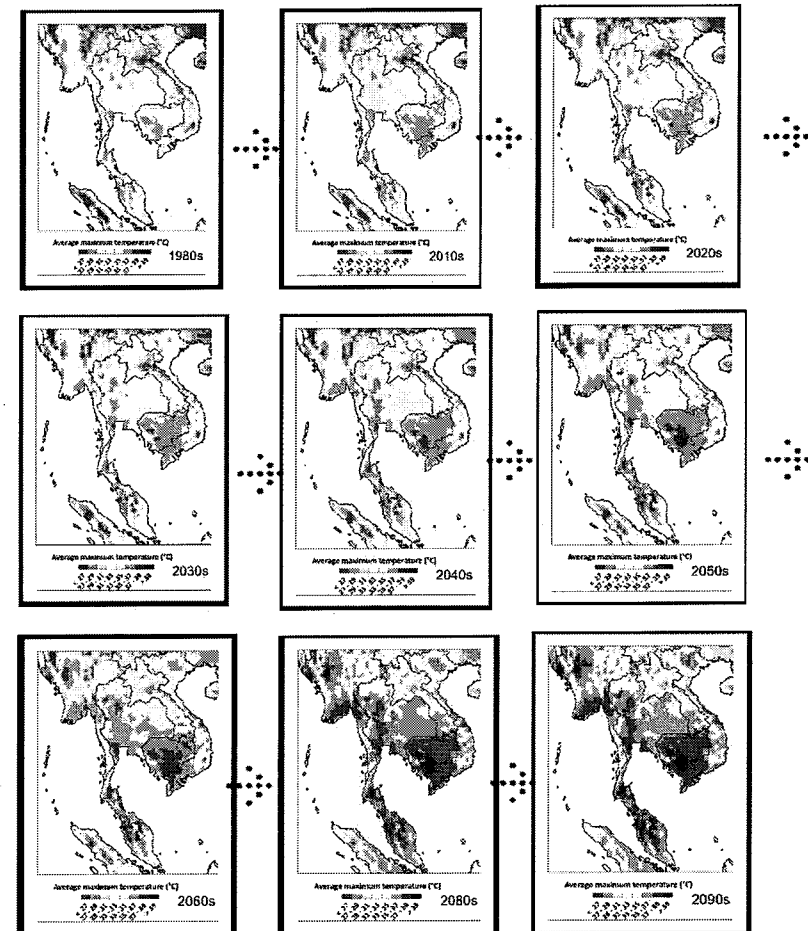
<https://www.wunderground.com/>

※ The above contents are planned and can be changed during the design process

> AV\_Monitor 1– Average minimum temperature



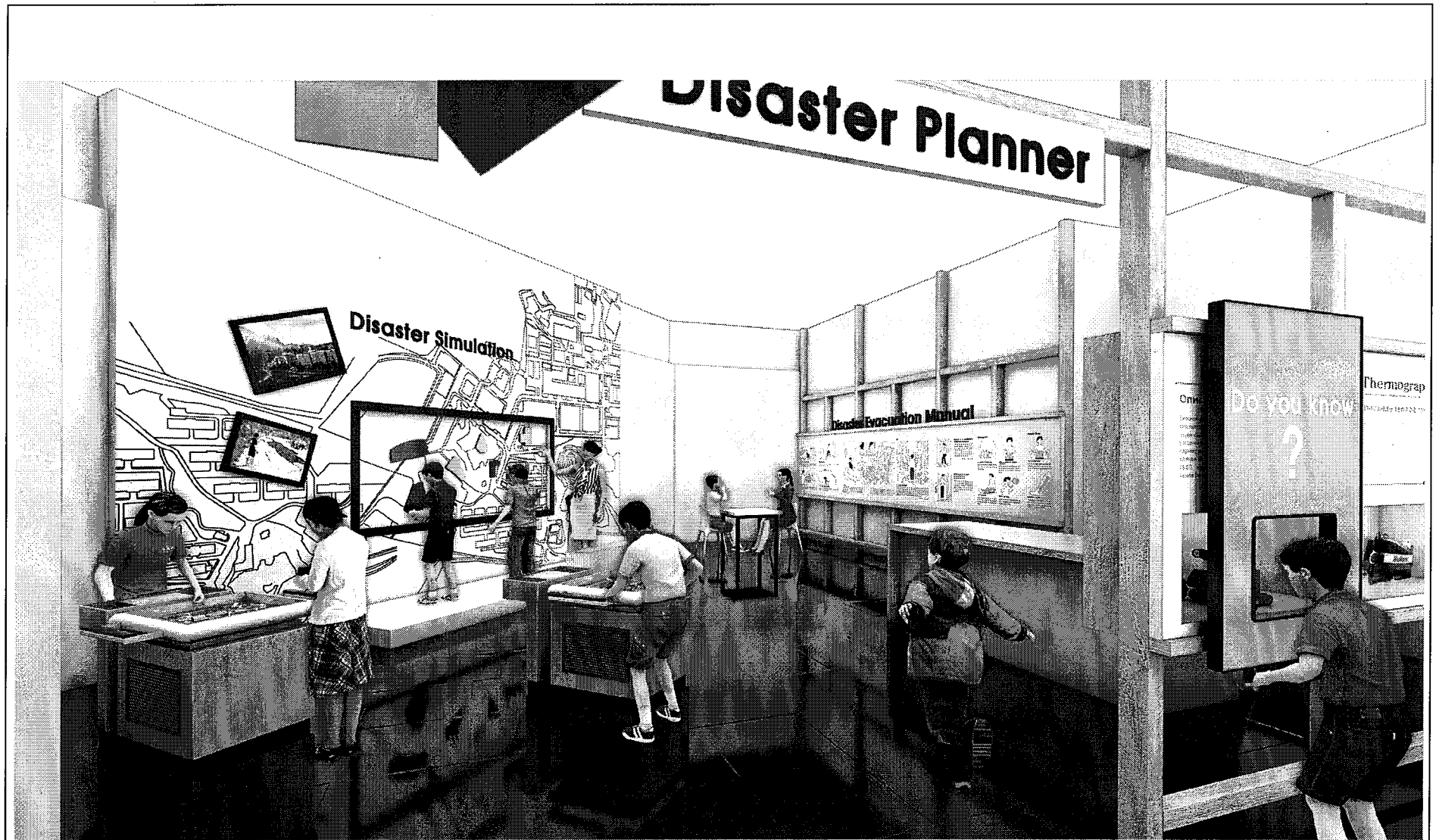
> AV\_Monitor 2 - Average maximum temperature



05 Cluster1 Job Experience

## — Disaster Management Institute | Disaster Planner

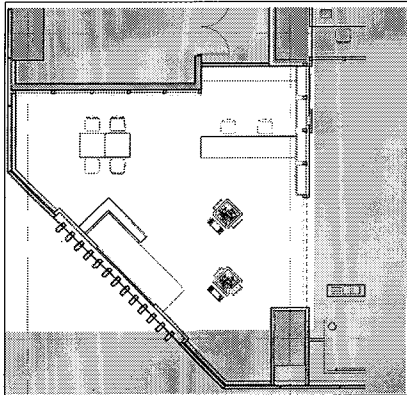
| Perspective



## 05 Cluster1 Job Experience

# Disaster Management Institute | Disaster Planner

### | Partial Floor Plan



### ■ Main Item

ITEM	QTY	IMAGE
Simulation map model (Moving Table)/ Block set	2 SET	

ITEM	QTY	IMAGE
Thai map graphic/ Magnetic Board	1 SET	

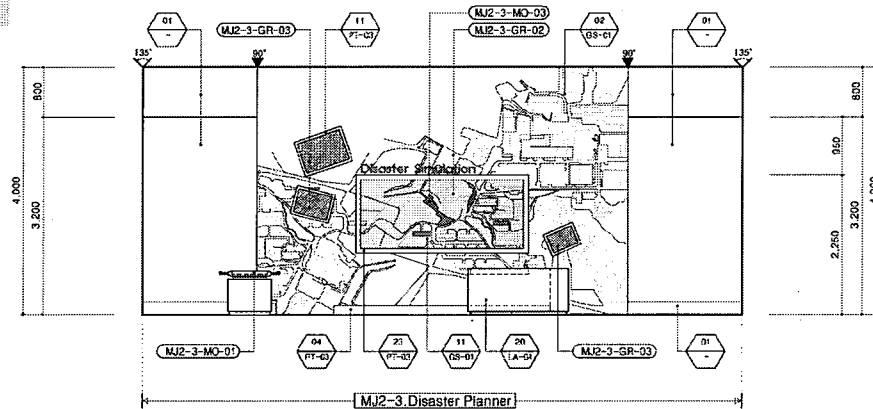
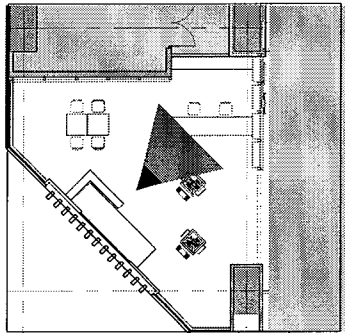
### ■ Experience Scenario

Time (min)	Disaster Planner		
	Operating	Job Experience	Media
15	1. Explain the necessity of the preparation of disaster, NDWC which is warning system and Disaster Management Institute 2. Introduce the domestic and foreign disaster cases, explain the mission → Guide the debate about how to reinforce the disaster preparedness capacity 3. Explain experience contents and guide to which job the participants going to choose 4. Get each job's uniform and move to experience room	<b>1. Orientation (15min)</b> 1) Listen the explanation about the necessity of preparedness for disaster, the NDWC (National Disaster Warning Center) and Disaster countermeasure research field. 2) <b>Mission!! "Prepare for the future disaster and cultivate the capacity that respond to the EMERGENCY situation"</b> → Reference the disaster case images on the World map graphic wall, talk about How to deal with the big disaster as soon as possible. 3) Make a basic introduction of disaster management institute jobs (Climate Change Analyst, Disaster Planner, Emergency medical technician) and make a choice which job the participants going to choose → Choose what each participants want or randomly assign 4) Get each job's uniform and move to experience room	Uniform/ Laptop/ Image graphic (World map)/ Graphic Sheet (Actual disaster case image)
45	1. Move to Disaster Planner experience room, make a buddy system 2. Introduce how to analyze the data which is related to flood, and Check the estimated damage area through the map graphic 3. Through the simulation map model, guide the participants make a various evacuation route 3. Guide how to fill the evacuation manual	<b>⇒ Move to Disaster Planner Corner</b> → Through the simulating various evacuation route, make the best evacuation manual.  <b>1. Analyze the flood data, check the estimated damage area (10min)</b> 1) Making buddy system and then receive the climate change data related to flood. 2) Compare and analyze annual climate change data, check the estimated damage area on the Thai map graphic with the teacher. <b>2. Minimize the flood damage Simulation (15min)</b> 1) Make a block type drain on the checked estimated damage area. 2) Using the simulation map model (which can move up and down), Roll the ball from the start and make the best evacuation route to minimize the flood damage. <b>3. Fill the Disaster Response Manual (5min):</b> 1) Standard to the best efficient evacuation route, fill a evacuation route on the disaster response manual. (Expansion drainage, Ensure the evacuation route)	Simulation map model (Moving Table) / Block SET (including balls) / Magnetic Board /  Graphic Sheet (Thai topography) / Work paper (Disaster response manual)
60	1. Guide the participant's experience comment presentation 2. Explain the disaster rescue equipment and direction 3. Guide the career and university information 4. Take a commemorate photo and give some notices. ※ Arrangement the experience equipment and reset the system	<b>1. Present Experience comment (5min)</b> 1) Wrap-up the experience and make some presentation about how the participants overcome the disaster <b>2. Explain disaster relief tools and testing them (5min)</b> 1) Display disaster relief tools, explain how to use them and experience the equipment <b>3. Job Information &amp; Commemorate photo (5min)</b> 1) Take some information about jobs and university information which is related to disaster management field 2) Take a commemorate photo with colleague	Disaster relief tools / Graphic panel + moving panel / Job Info-guide Paper/ Camera

## 05 Cluster1 Job Experience

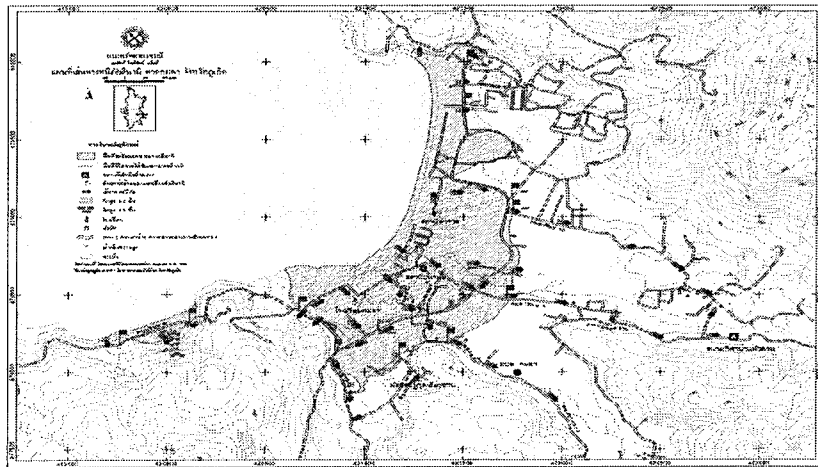
### Disaster Management Institute | Disaster Planner

#### > SPACE \_ ELEVATION

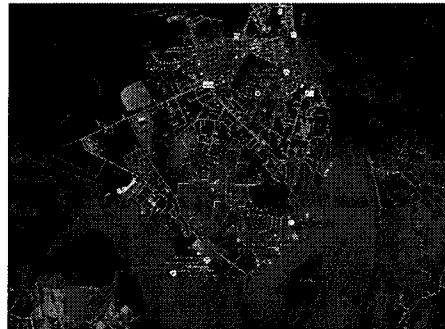
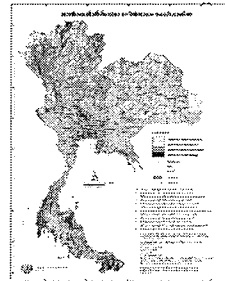


#### > SIGN \_ Map graphic

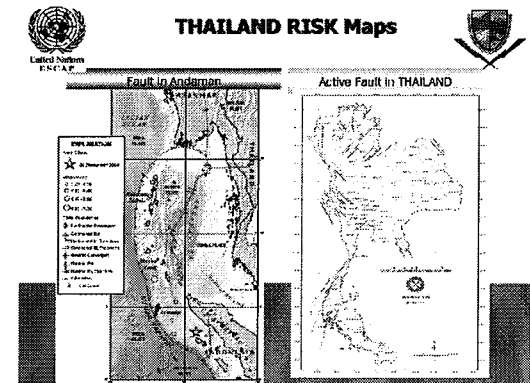
##### Floods / Tsunami Evacuation map-Phuket



Thai\_MU BAN NONGNUT-->



##### --> Thailand Risk Map

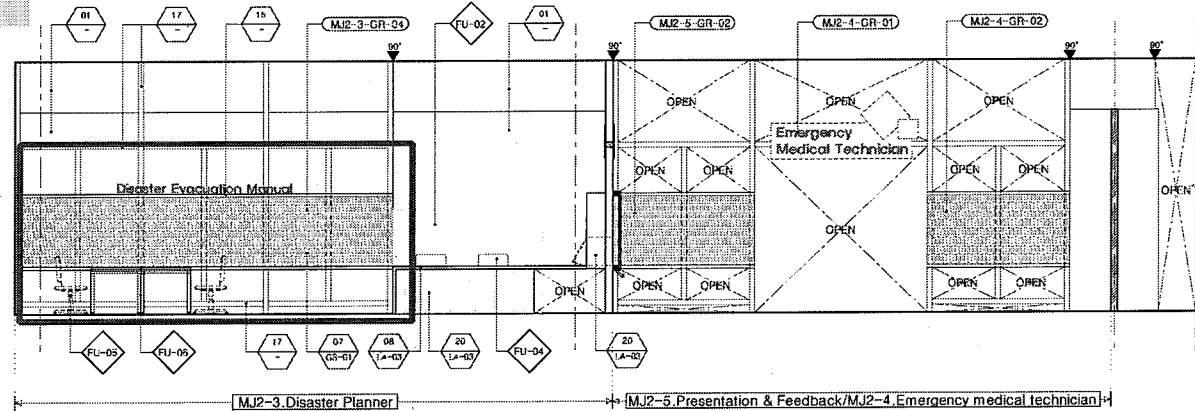
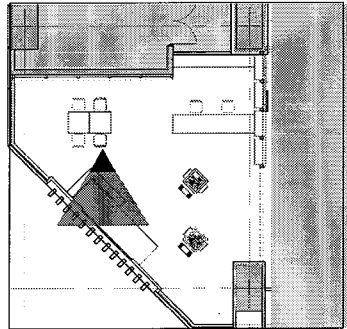


※ The above contents are planned and can be changed during the design process

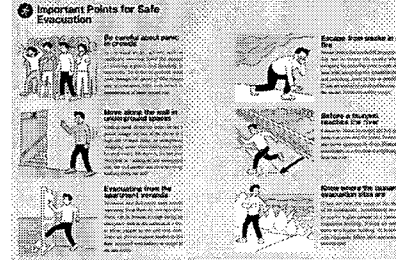
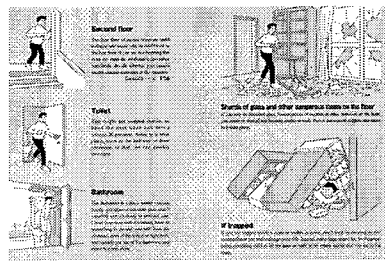
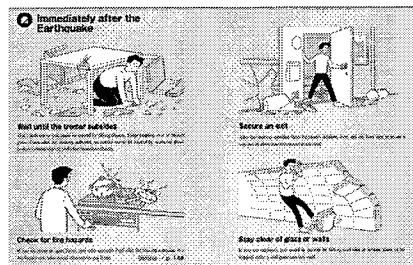
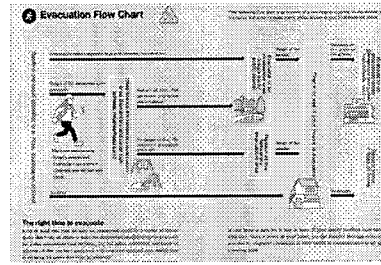
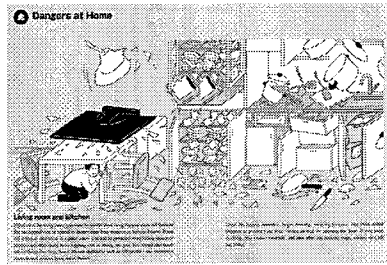
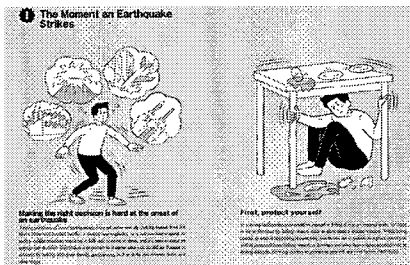
## 05 Cluster1 Job Experience

# Disaster Management Institute | Disaster Planner

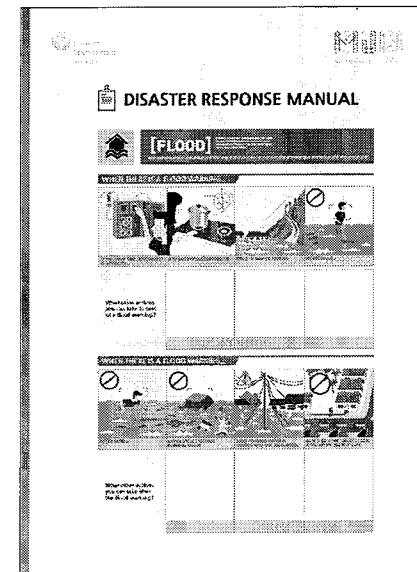
### > SPACE\_ELEVATION



### > SIGN\_Disaster Response Manual



### > SIGN\_Work Paper



※ The above contents are planned and can be changed during the design process

05 Cluster1 Job Experience

## — Disaster Management Institute | Emergency Medical Technician

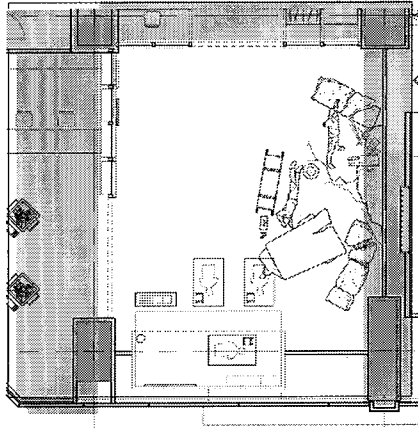
| Perspective



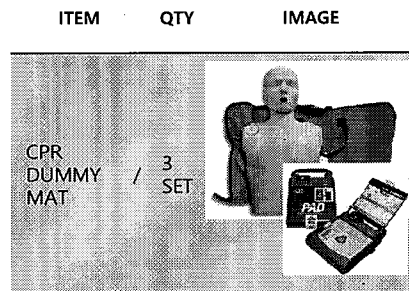
## 05 Cluster1 Job Experience

# Disaster Management Institute | Emergency Medical Technician

### | Partial Floor Plan



### ■ Main Item



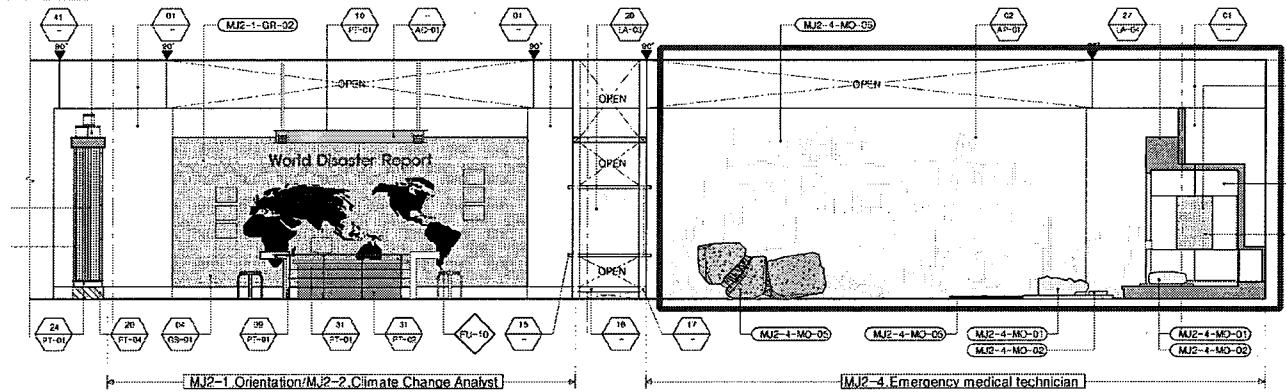
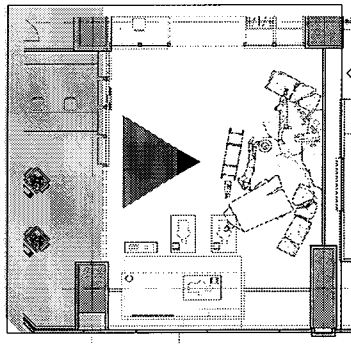
### ■ Experience Scenario

Emergency Medical Technician			
Time (min)	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Explain the necessity of the preparation of disaster, NDWC which is warning system and Disaster Management Institute</li> <li>2. Introduce the domestic and foreign disaster cases, explain the mission → Guide the debate about how to reinforce the disaster preparedness capacity</li> <li>3. Explain experience contents and guide to which job the participants going to choose</li> <li>4. Get each job's uniform and move to experience room</li> </ol>	<ol style="list-style-type: none"> <li>1. Orientation (15min)                             <ol style="list-style-type: none"> <li>1) Listen the explanation about the necessity of preparedness for disaster, the NDWC(National Disaster Warning Center) and Disaster countermeasure research field.</li> <li>2) <b>Mission!! "Prepare for the future disaster and cultivate the capacity that respond to the EMERGENCY situation"</b> → Reference the disaster case images on the World map graphic wall, talk about How to deal with the big disaster as soon as possible.</li> <li>3) Make a basic introduction of disaster management institute jobs(Climate Change Analyst, Disaster Planner, Emergency medical technician) and make a choice which job the participants going to choose → Choose what each participants want or randomly assign</li> <li>4) Get each job's uniform and move to experience room</li> </ol> </li> </ol>	Uniform/ Laptop/ Image graphic (World map)/ Graphic Sheet (Actual disaster case image)
45	<ol style="list-style-type: none"> <li>1. Move to Emergency Medical Technician experience corner, make a buddy system</li> <li>2. Educate the emergency situation and basic First aid method</li> <li>3. Testing Ambulance equipment</li> <li>4. Present First Aid at the Emergency situation and guide the experience</li> <li>5. Guide the experience through CPR DUMMY</li> </ol>	<p>⇒ <b>Move to Emergency Medical Technician corner</b> → Reenact the fire accident scene, practice the evacuation and first aid kit at the actual disaster situation.</p> <ol style="list-style-type: none"> <li>1. Lectures on how to response the disaster (10min)                             <ol style="list-style-type: none"> <li>1) Make a buddy system and take a class about the EMERGENCY situation and first aid method</li> <li>2) Ambulance(model): Introduce the built in equipment and its manual - Stretcher, Oxygen brakes, Oxygen respirator, Neck strap, First Aid kit and so on</li> </ol> </li> <li>2. Practice first aid at the accident scene (20min)                             <ol style="list-style-type: none"> <li>1) Take a class about the First aid manual and equipment usage using DUMMY at the fire scene</li> <li>2) Targeting CPR DUMMY, practice the CPR process ▶ Obstruction: Airway → CPR(chest compression) : Check the patient's condition, practice the CPR according to the process [Check the victim for unresponsiveness → Sustain Airway → Check breath → Ventilations → Check the cardiac arrest → Find the cardiac compression location → cardiac compression → check again] ▶ Treating Injury-Fracture(Ankle) : Check the injury and trying to deal with. [Take off the shoe → Place a cloth on the injured sole, uphold the splint and fix it.]</li> </ol> </li> </ol>	/Cardiac defibrillator CPR DUMMY/ First Aid Kit / Fire extinguisher / Reenact Fire Scene  Graphic Sheet(CPR direction)/ Graphic Sheet(Summary, introduction and direction of First Aid Kit) / Graphic Scasi (Ambulance)
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Explain the disaster rescue equipment and direction</li> <li>3. Guide the career and university information</li> <li>4. Take a commemorate photo and give some notices.</li> </ol> <p>※Arrangement the experience equipment and reset the system</p>	<ol style="list-style-type: none"> <li>1. Present Experience comment(5min)                             <ol style="list-style-type: none"> <li>1) Wrap-up the experience and make some presentation about how the participants overcome the disaster</li> </ol> </li> <li>2. Explain disaster relief tools and testing them (5min)                             <ol style="list-style-type: none"> <li>1) Display disaster relief tools, explain how to use them and experience the equipment</li> </ol> </li> <li>3. Job Information &amp; Commemorate photo (5min)                             <ol style="list-style-type: none"> <li>1) Take some information about jobs and university information which is related to disaster management field</li> <li>2) Take a commemorate photo with colleague</li> </ol> </li> </ol>	Disaster relief tools / Graphic panel + moving panel / Job Info-guide Paper/ Camera

## 05 Cluster1 Job Experience

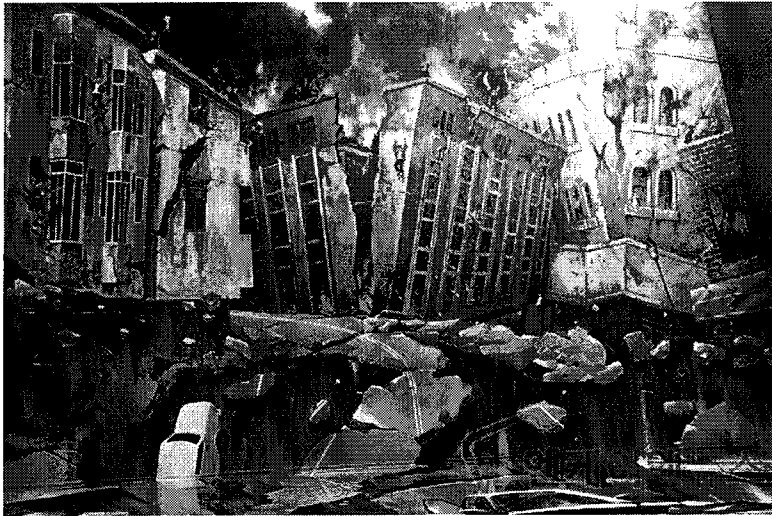
### — Disaster Management Institute | Emergency Medical Technician

#### > SPACE ELEVATION



#### > MODEL\_3D PAINTING

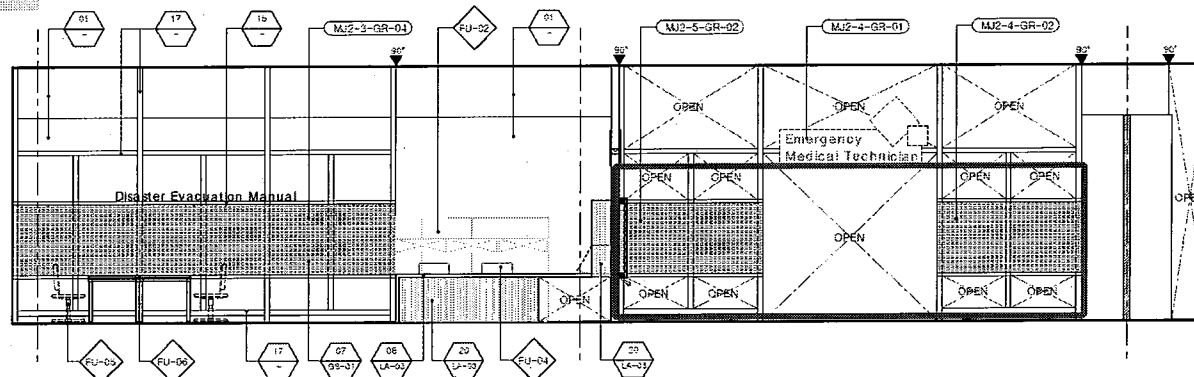
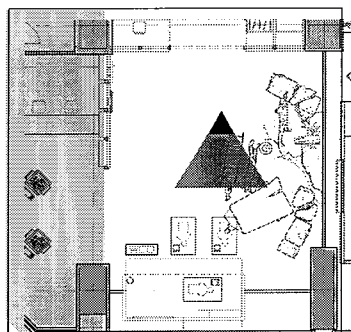
→ Reenact the fire scene using 3D painting ,stretcher, first aid kit, Concrete fractures



※ The above contents are planned and can be changed during the design process

— Disaster Management Institute | Emergency Medical Technician

## > SPACE ELEVATION



> SIGN CPR Manual

**CPR is as easy as**

**C - A - B**



**C**ompressions  
Push hard and fast  
on the center of  
the victim's chest.

### Airway

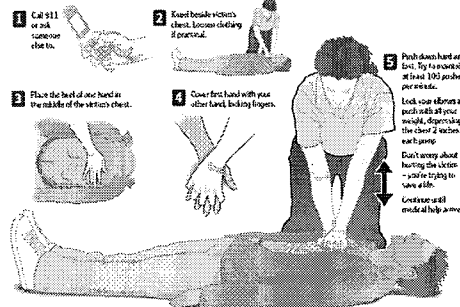
Tilt the victim's head back and lift the chin to open the airway.

## Breathing

Give mouth-to-mouth rescue breaths

### Hands-only CPR

The latest research shows that chest compressions alone are the most effective way for an untrained bystander to save a life after an adult collapses from cardiac arrest. The technique shown here should not be performed on infants, children, pregnant victims, or in a swimming pool or near a body of water. (American Heart Association, 2010)



SCIENCE: About 100,000 years ago, a volcanic eruption buried the city of Pompeii under a thick layer of ash and lava.

### Measurement of stress

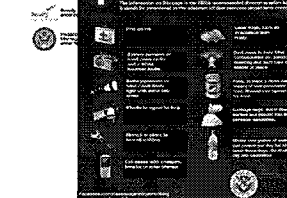
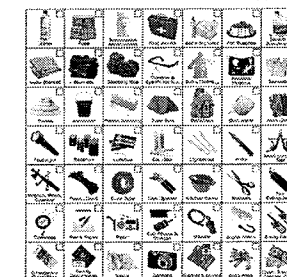
### > SIGN\_Emergency Kit

**<EMERGENCY DISASTER KIT>**



 **Emergency Kit**

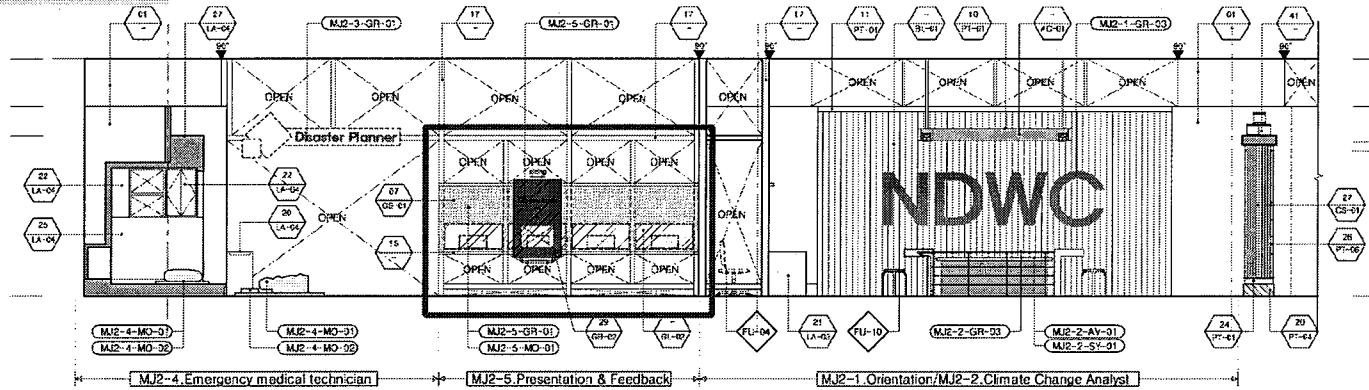
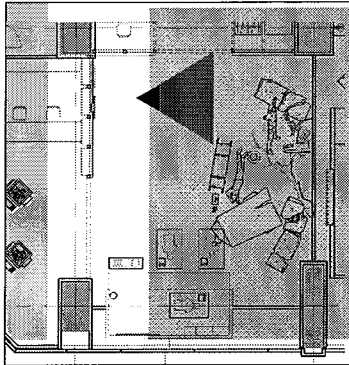
### Visual Checklist for Disaster Supplies



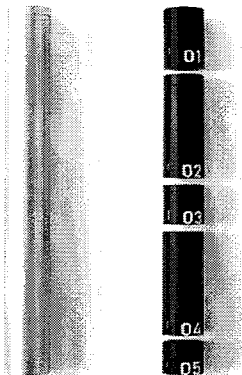
※ The above contents are planned and can be changed during the design process

— Disaster Management Institute | Presentation And Feedback

## > SPACE ELEVATION



## > MODEL/SIGN\_ Disaster Rescue Equipment



<MINIM+AID>



< Thermal camera>

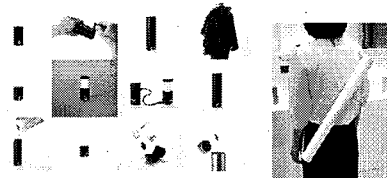
Classify	Summary
Mass	1.7kg below
Heat resistance	300°F(260°C) / 8min
Waterproof	IP67
Resolution	320X240(76,800) more than



<Navigation equipment>

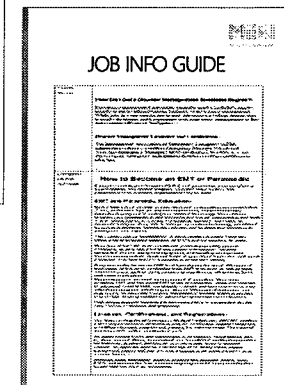
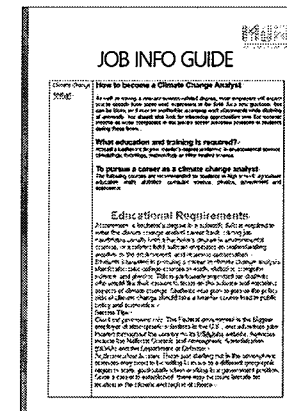
Classify	Summary
Length/ weight	maximum 250cm / 3.5kg below
Camera diameter	38mm below
Camera rense	¼" Color CCD Sensor

Classify	Summary
Total Size (L x W x H)	900 x 650 x 370mm
Total Weight	40kgf
Payload	20 kgf
Max Velocity	8 km/h
Gradability	35°
Traction Motor	DC Motor
Operating time	1 hr



### <Firefighting Robots>

> SIGN\_ Job info guide Paper

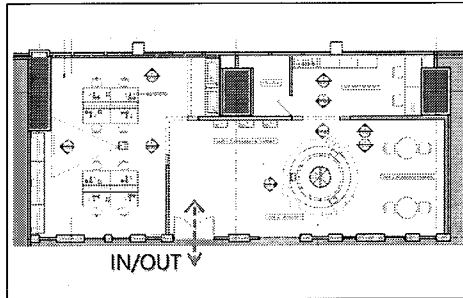


※ The above contents are planned and can be changed during the design process

## 06 Cluster1 Job Experience

### Bio-Medical Center

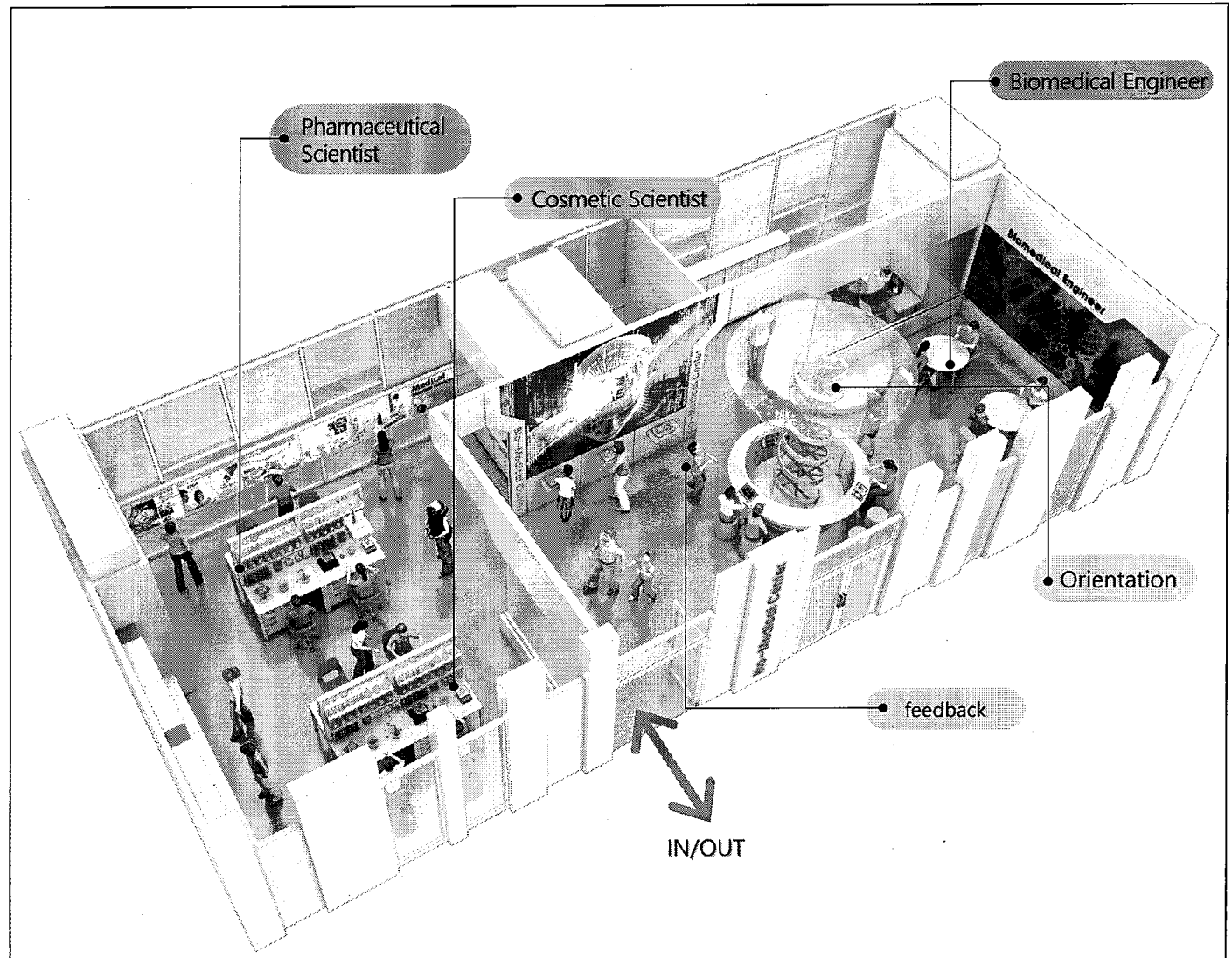
#### Floor Plan



#### Action Summary

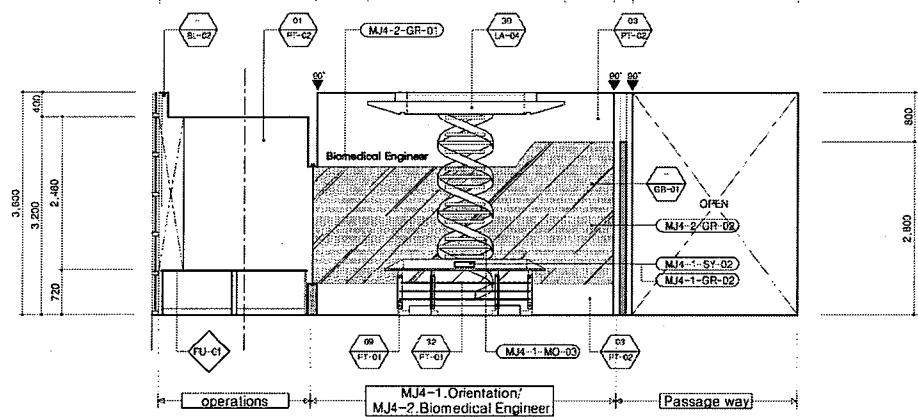
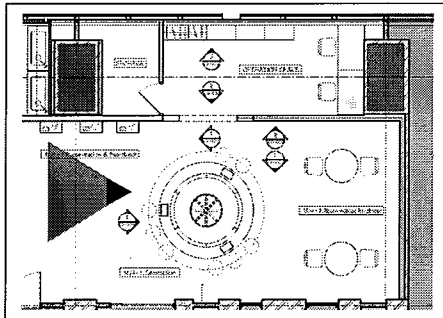
Mission	Suggest customized Beauty & Health solution through analyzing personal DNA	
	Time	60min
Operation Plan	Participants	12p
	Staff	3p
	Area	131.57m <sup>2</sup>
Main Actioning	Biomedical Engineer	Suggest customized Health & Beauty Life plan
	Pharmaceutical Scientist	Prescribe customized secondary drugs and titration experiment
	Cosmetic Scientist	Make customized natural oil cosmetics

#### Isometric



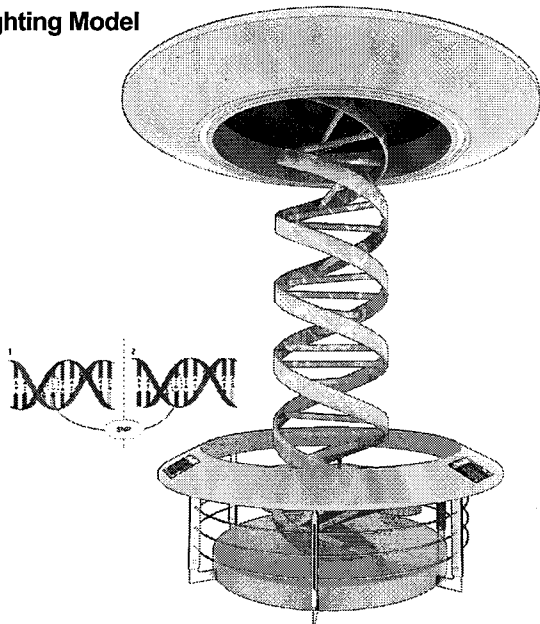
**Bio-Medical Center** | Orientation

## > SPACE \_ ELEVATION



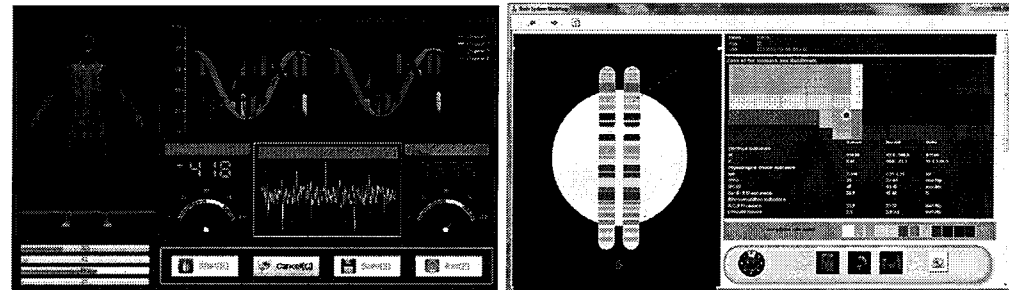
## > Model\_DNA Structure Model

## DNA\_Lighting Model

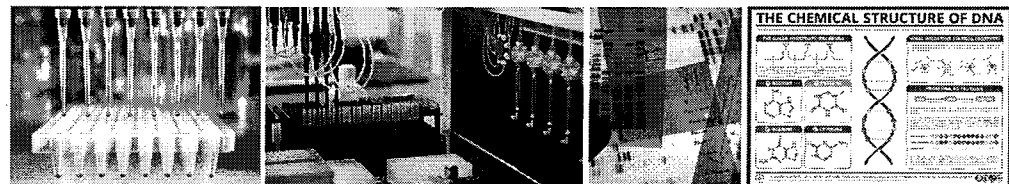


## > Sign\_DNA Analysis Data

### DNA Analysis Data Image



### DNA Analysis Image



## DNA Analysis Process

06 Cluster1 Job Experience

— Bio-Medical Center | Biomedical Engineer

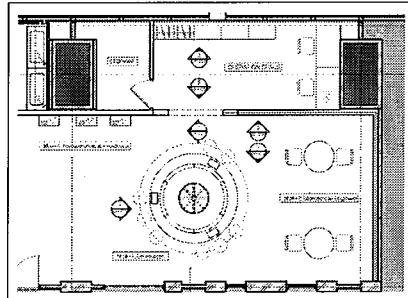
| Perspective



## 06 Cluster1 Job Experience

### Bio-Medical Center | Biomedical Engineer

#### | Partial Floor Plan



#### ■ Main Item

ITEM	QTY	IMAGE
DNA Lighting Model	1set	

ITEM	QTY	IMAGE
DNA Analysis Data	1set	

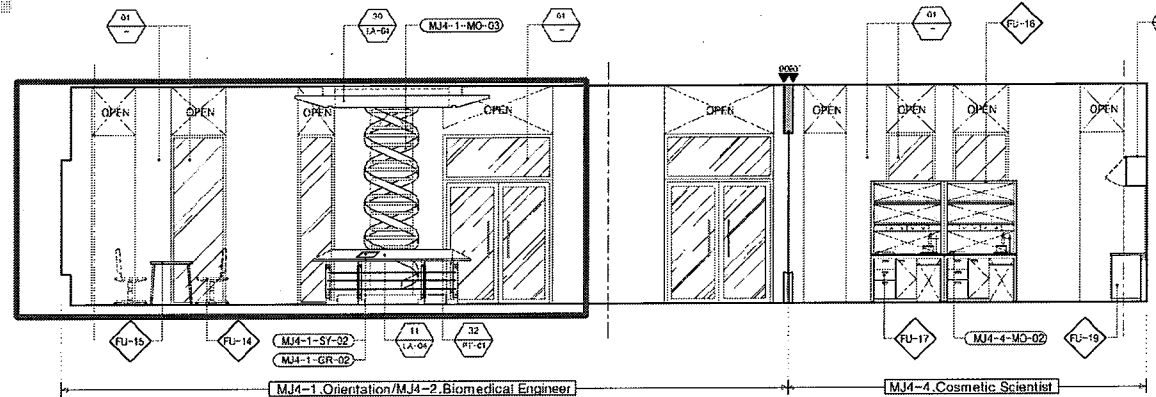
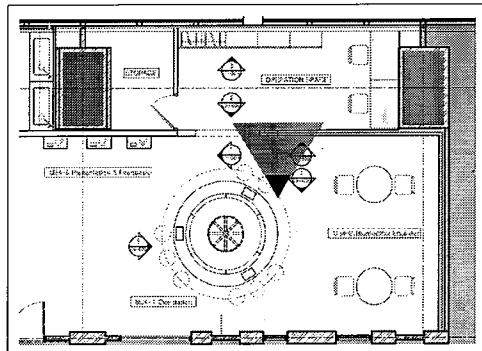
#### ■ Experience Scenario

Time (min)	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Explain biomedical research field which is research about human's health and beauty.</li> <li>2. Explain Mr.Kwang(virtual client)'s request and DNA analysis result.</li> <li>3. Explain experience contents and jobs, and guide to which job the participants going to choose</li> <li>4. Hand out each job's uniform and make the participants move to experience room</li> </ol>	<b>1. Orientation (15min)</b> 1) Listen the description about DNA analyzing service and various biomedical research field which can predict and prevent one's various potential disease through analyzing DNA, finding out each person's food, medicine reaction and genetic characteristic <b>2) Mission!! "Suggest Customized Health &amp; Beauty Service through analyzing DNA"</b> →With the DNA Structure Model and Monitor's analyzed DNA data, Listen the description about Mr.Kwang(virtual Client)'s analyzed DNA data result. 3) Listen the description about Basic Information and Bio Medical center's jobs(Biomedical Engineer, Pharmaceutical Scientist, Cosmetic Scientist) and make a choice which job the participants going to choose. → Choose what each participants want or randomly assign 4) Get each job's uniform(Lab coat) and move to experience room	Uniform/ Laptop/ Image Graphic(DNA)/ DNA Lighting Model/ Monitor/ DNA analysis data image(Summary Report)/
45	<ol style="list-style-type: none"> <li>1. Move to Biomedical Engineer experience room, make a buddy system</li> <li>2. Explain experience contents</li> <li>3. Deliver Mr.Kwang's DNA Report to experience team. → check Internal/External physical itemized content and then guide how to analyze personal genetic characteristics.</li> <li>4. Guide to suggest customized solution(exercise &amp; diet) according to analyzed data each team.</li> <li>5. Based on Mr.Kwang's analyzed DNA data, guide how to make customized life plan.</li> </ol>	→ <b>Move to Biomedical Engineer corner</b> →Through personal DNA analyzing, analyze genetic characteristics which can affect to health and beauty and suggest customized solution  <b>1. Analyze personal DNA data, suggest customized solution (20min)</b> 1) Delivered Mr.Kwang(virtual client)'s DNA Analysis Report as a buddy system 2) Checking Internal/External itemized Content, analyze personal genetic characteristics. →Analyze Internal item [body mass index/neutral fat/cholesterol/blood sugar/blood pressure/caffeine metabolism] and genetic weakness →Analyze External item [skin aging/skin elasticity/pigmentation/hair loss/Thick hair/Concentration of Vitamin C] and genetic weakness 3) Suggest customized solution as to personal genetic characteristics →As to analyzing genotype, suggest healthcare way and improving lifestyle method. (genotype custom exercise & diet)  <b>2. Fill the Bio(Life)-Plan Report (10min)</b> : Fill the Bio(Life)-plan report as to Mr.Kwang(virtual client)'s Genotype	DNA analysis detailed report/ Sample Paper/ Life Plan Report Work Paper
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Introducing Smart health care product, guide the test and participant's experience</li> <li>3. Explain Biomedical technique's direction and future.</li> <li>4. Guide the career and university information</li> <li>5. Take a commemorate photo and give some notices</li> </ol> ※Arrangement the experience equipment and reset the system	<b>1. Experience Smart Health Care &amp; Feedback (10min)</b> 1) Wrap-up the experience, gather to feedback corner and make some presentation about the experience 2) Experience Smart health care product: Take a description about Health care product, and as long as applicants, try it on 3) Talk about Bio&Nano Technology's future.  <b>2. Job Information &amp; Commemorate photo (5min)</b> 1) Take some information about jobs and university information which is related to biomedical technology 2) Take a commemorate photo with colleague	Smart healthcare Camera Image Graphic Explanation pannel Job Info-guide Paper

## 06 Cluster1 Job Experience

### Bio-Medical Center | Biomedical Engineer

#### > SPACE\_ELEVATION

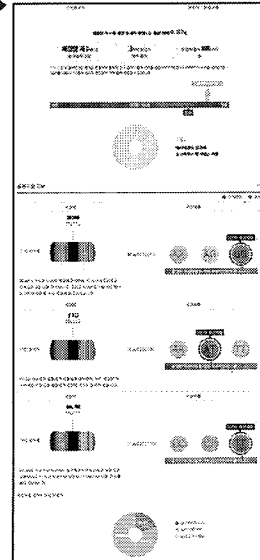


#### > Sign\_DNA Analysis Report

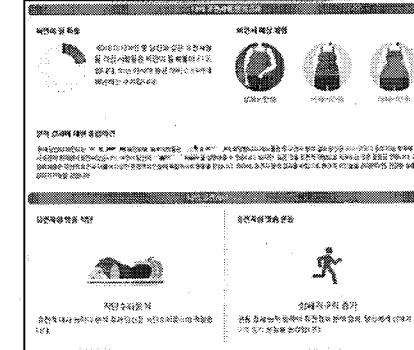
##### Internal/ External itemized contents report

<b>채광량지수 (314)</b> 채광량지수 314 채광량지수 314는 채광량지수 314를 나타내는 지표이다.	<b>중성지방</b> 중성지방은 지방의 일종으로, 혈액을 통해 운반된다. 중성지방 수치가 높으면 동맥경화 위험이 증가한다.
<b>콜레스테롤</b> 콜레스테롤은 혈액을 구성하는 성분으로, 세포막을 구성하고 호르몬을 생성하는 데 필요하다. 콜레스테롤 수치가 높으면 동맥경화 위험이 증가한다.	<b>혈당</b> 혈당은 혈액 속에 dissolved된 당분으로, 신체의 주요 에너지원으로 사용된다. 혈당 수치가 높으면 당뇨병 위험이 증가한다.
<b>심장</b> 심장은 혈액을 펌프질하여 신체의 각 부위로 보내주는 기관이다. 심장은 신체의 건강을 유지하는 데 중요하다.	<b>카페인 대사</b> 카페인 대사는 신체가 카페인을 분해하고 배출하는 과정이다. 카페인 대사는 신체의 건강을 유지하는 데 중요하다.
<b>피부 노화</b> 피부 노화는 피부의 노화 현상으로, 피부의 탄력성을 잃고 주름이 생기거나 색소 침착이 발생할 수 있다.	<b>과부담</b> 과부담은 신체가 과도한 스트레스를 받거나 과로하는 상태를 말한다. 과부담은 신체의 건강을 유지하는 데 중요하다.
<b>색소 침착</b> 색소 침착은 피부에 색소 침착이 발생하는 현상으로, 피부의 탄력성을 잃고 주름이 생기거나 색소 침착이 발생할 수 있다.	<b>탈모</b> 탈모는 머리카락이 빠지는 현상으로, 탈모는 신체의 건강을 유지하는 데 중요하다.
<b>모발 굵기</b> 모발 굵기는 머리카락의 굵기를 나타내는 지표이다. 모발 굵기는 신체의 건강을 유지하는 데 중요하다.	<b>비타민 C 대사</b> 비타민 C 대사는 신체가 비타민 C를 분해하고 배출하는 과정이다. 비타민 C 대사는 신체의 건강을 유지하는 데 중요하다.

(Example)



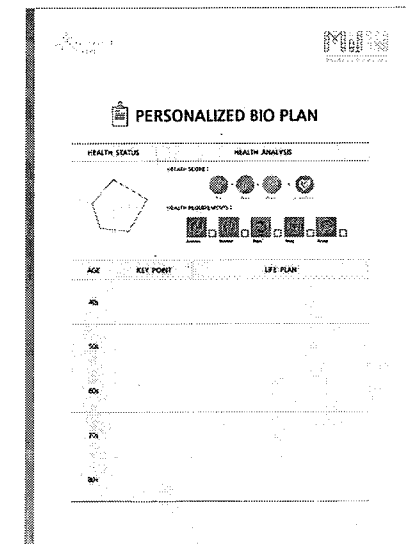
##### Genotype customized diet & exercise (Example)



(Example)

#### > Sign\_Work Paper

##### Bio(Life)-Plan Report



※ The above contents are planned and can be changed during the design process

## &gt; CONTENTS

## Biomedical Engineer

## The path to Biomedical Engineer

Biomedical engineering which is also referred to as medical engineering or medical engineering, bioengineering, medical engineering and others is called BME in short. According to CNN in 2013, it is the best job in America out of the jobs surveyed based on various indexes related to jobs such as materials from Bureau of Labor Statistics.



In 2026, the population aged 65 and above exceeded 10 million. Copious life leads to an increase in demand for quality of life, longer lifespan and health management. The performance of medical technology including artificial organs, organ transplant, emotion adjusting devices and others will open new doors to disease treatment.

Biomedical engineering which is also referred to as medical engineering or medical engineering, bioengineering, medical engineering and others is called BME in short. According to CNN in 2013, it is the best job in America out of the jobs surveyed based on various indexes related to jobs such as materials from Bureau of Labor Statistics.

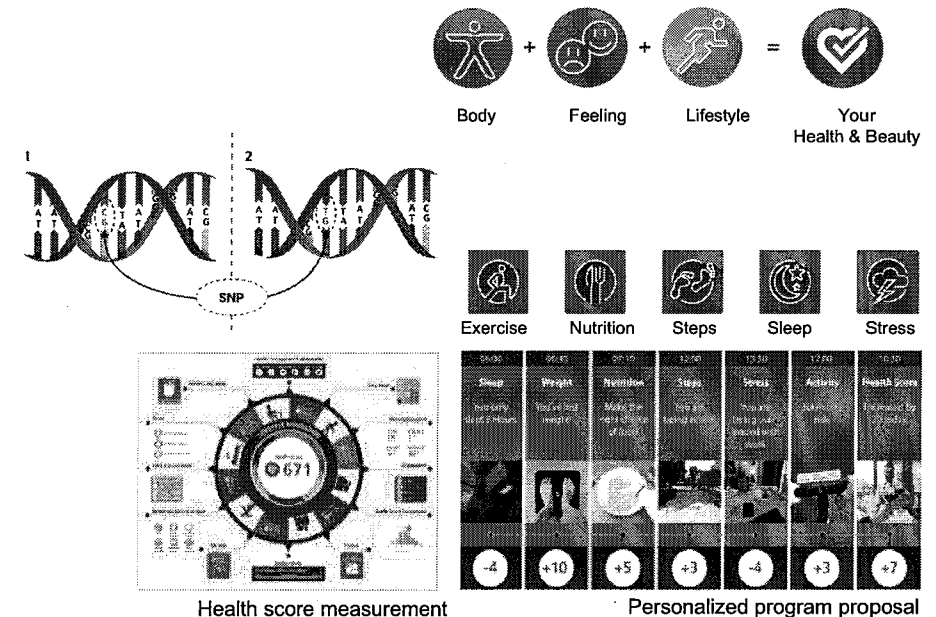
Biomedical engineer has ranked first for 2 consecutive years after receiving the best grade 'A' in job satisfaction, social benefits and work stress and due to the investment and interest on medical and health welfare in Korea, it is one of the academic areas that is quickly receiving investment and interest.

After graduation, multiple majors can be taken in medical universities and graduates can get employed in domestic and foreign medical device companies, pharmaceutical companies, general hospitals and other medical engineering fields.

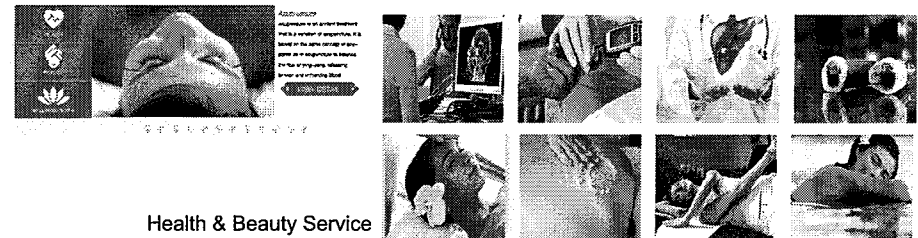
According to 'CNN's Top 100 Job Announcement', the best job in America was 'biomedical engineer' followed by professional nurse in the second place. It is notable that biomedical engineering, which is a technician in the field of biomedical engineering has been ranked first as the best job in America.

Applicants need to have a lot of knowledge related to basic science such as physics, biology, electronic engineering, information science and others. Currently, there are many great jobs available in Netherlands, Italy, USA, Asia and so on where the medical device market is rapidly increasing so if the applicant is able to go to frequent business trips overseas, it will be an advantage.

Experience personalized consulting (bio plan and medical equipment) based on health score data measured using DNA analysis data



## Medical Service



## Health &amp; Beauty Service

※ The above contents are planned and can be changed during the design process

## 06 Cluster1 Job Experience

### — Bio-Medical Center | Pharmaceutical Scientist / Cosmetic Scientist

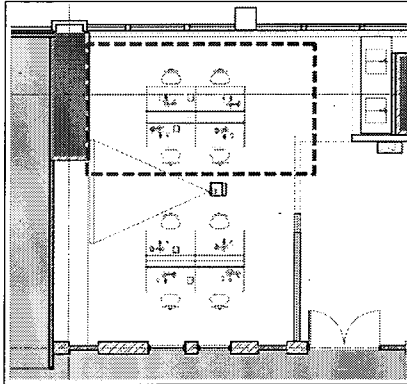
| Perspective



## 06 Cluster1 Job Experience

### Bio-Medical Center | Pharmaceutical Scientist

#### Partial Floor Plan



#### Main Item

ITEM	QTY	IMAGE
Medicine Making Kit SET	2SET	

ITEM	QTY	IMAGE
Experiment Equipment	2SET	

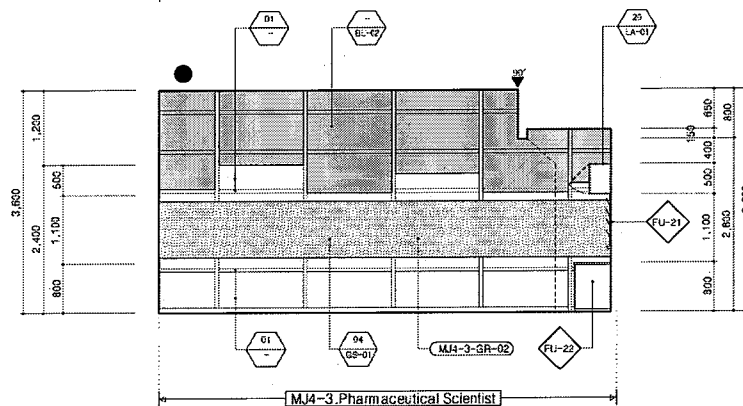
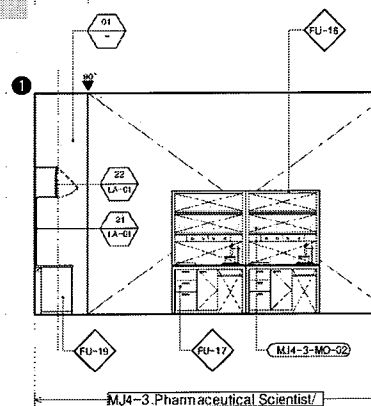
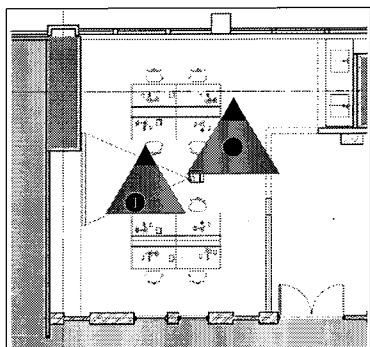
#### Experience Scenario

Time (min)	Pharmaceutical Scientist		
	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Explain biomedical research field which is research about human's health and beauty.</li> <li>2. Explain Mr.Kwang(virtual client)'s request and DNA analysis result.</li> <li>3. Explain experience contents and jobs, and guide to which job the participants going to choose</li> <li>4. Hand out each job's uniform and make the participants move to experience room</li> </ol>	<ol style="list-style-type: none"> <li>1. Orientation (15min)                             <ol style="list-style-type: none"> <li>1) Listen the description about DNA analyzing service and various biomedical research field which can predict and prevent one's various potential disease through analyzing DNA, finding out each person's food, medicine reaction and genetic characteristic</li> <li>2) <b>Mission!! "Suggest Customized Health &amp; Beauty Service through analyzing DNA"</b> → With the DNA Structure Model and Monitor's analyzed DNA data, Listen the description about Mr.Kwang(virtual Client)'s analyzed DNA data result.</li> <li>3) Listen the description about Basic Information and Bio Medical center's jobs(Biomedical Engineer, Pharmaceutical Scientist, Cosmetic Scientist) and make a choice which job the participants going to choose. → Choose what each participants want or randomly assign</li> <li>4) Get each job's uniform(Lab coat) and move to experience room</li> </ol> </li> </ol>	Uniform/ Laptop/ Image Graphic(DNA)/ DNA Lighting Model/ Monitor/ DNA analysis data image(Summary Report)/
45	<ol style="list-style-type: none"> <li>1. Move to Pharmaceutical Scientist corner, make a buddy system.</li> <li>2. Explain experiment equipment direction and guide safety rules</li> <li>3. DNA analysis data Check &amp; explain experiment contents → Guide to check internal DNA items of DNA analysis summary report → Titration experiment using iodine and vitamin C for prescribe secondary medicine. [Titration experiment – chemical experiment for checking what materials in it]</li> <li>4. Guide Medical Service contents</li> </ol>	<p>→ <b>Move to Pharmaceutical Scientist corner</b> → Considering internal genetic characteristic, healthcare through prescribing secondary medicine and maximizing drug's effect.</p> <ol style="list-style-type: none"> <li>1. According to analyzed DNA data, prescribe customized medicine considering internal genetic characteristics(25min)                             <ol style="list-style-type: none"> <li>1) Making a buddy system, check experiment equipment and materials.</li> <li>2) Take a class about experiment process and safety rules</li> <li>3) Check Mr.Kwang(virtual client)'s internal genetic characteristics for improving healthcare of DNA analysis data</li> <li>4) <b>chemistry experiment(Iodimetric Titration: Vitamin C Titration) for prescribing secondary medicine(vitamin C)</b> <ol style="list-style-type: none"> <li>① Dissolute starch to water. 1000ml/12spoon</li> <li>② Put iodine to starch water</li> <li>③ Pour some beverage(which contain vitamin C- Commercially available) to beaker per 20ml each, and label them</li> <li>④ Drop the starch-iodine solution to each beaker by burette</li> <li>⑤ Drop the solution until the beverage's color going to change like starch-iodine solution, record each beverage's change point and compare them.</li> <li>⑥ Check each beverage's vitamin C content and prescribe most suitable beverage.</li> </ol> </li> </ol> </li> <li>2. Recommend customized Medical &amp; Health Service (5min)                             <ol style="list-style-type: none"> <li>1) Recommend Medical Service like Bumrungrad International Hospital/ Health Care Medical Clinic(HCMC) at Chiang-mai / Cre resort Chiang-mai and so on</li> </ol> </li> </ol>	Medicine making KIT / Experiment equipment SET  Image Graphic (Medical Service Center Image)
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Introducing Smart health care product, guide the test and participant's experience</li> <li>3. Explain Biomedical technique's direction and future.</li> <li>4. Guide the career and university information</li> <li>5. Take a commemorate photo and give some notices</li> </ol> <p>※Arrangement the experience equipment and reset the system</p>	<ol style="list-style-type: none"> <li>1. Experience Smart Health Care &amp; Feedback (10min)                             <ol style="list-style-type: none"> <li>1) Wrap-up the experience, gather to feedback corner and make some presentation about the experience</li> <li>2) Experience Smart health care product: Take a description about Health care product, and as long as applicants, try it on</li> <li>3) Talk about Bio&amp;Nano Technology's future.</li> </ol> </li> <li>2. Job Information &amp; Commemorate photo (5min)                             <ol style="list-style-type: none"> <li>1) Take some information about jobs and university information which is related to biomedical technology</li> <li>2) Take a commemorate photo with colleague</li> </ol> </li> </ol>	Smart healthcare Camera Image Graphic Explanation pannel Job Info-guide Paper

## 06 Cluster1 Job Experience

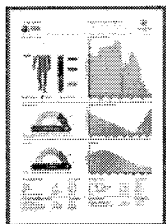
### Bio-Medical Center | Pharmaceutical Scientist

#### > SPACE \_ ELEVATION

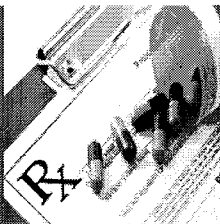


#### > Model Iodimetric Titration Experiment Kit

##### Iodimetric Titration : Vitamin C



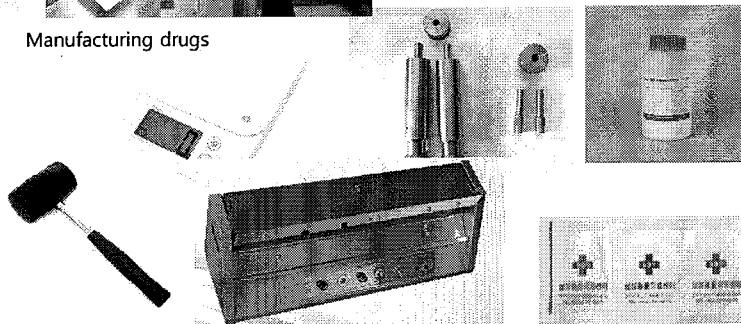
Health score and prescription



Manufacturing drugs



[Titration experiment  
- chemical experiment for checking what materials in it]



Experimental tools

##### Recommend Medical & Health Care Service



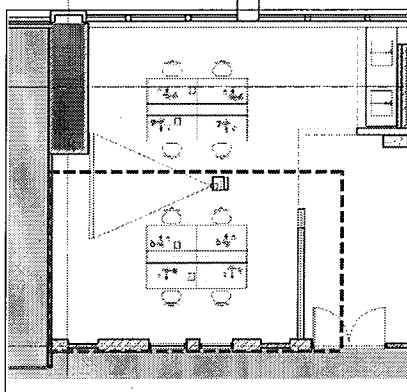
<Chiang Mai Healthcare Center>  
<http://www.healthcaremedicalclinic.com/> Reference

※ The above contents are planned and can be changed during the design process

## 06 Cluster1 Job Experience

### Bio-Medical Center | Cosmetic Scientist

#### Partial Floor Plan



#### Main Item

ITME	QTY	IMAGE
Cosmetic Making Kit	2SET	

ITEM	QTY	IMAGE
Experiment Equipment	2SET	

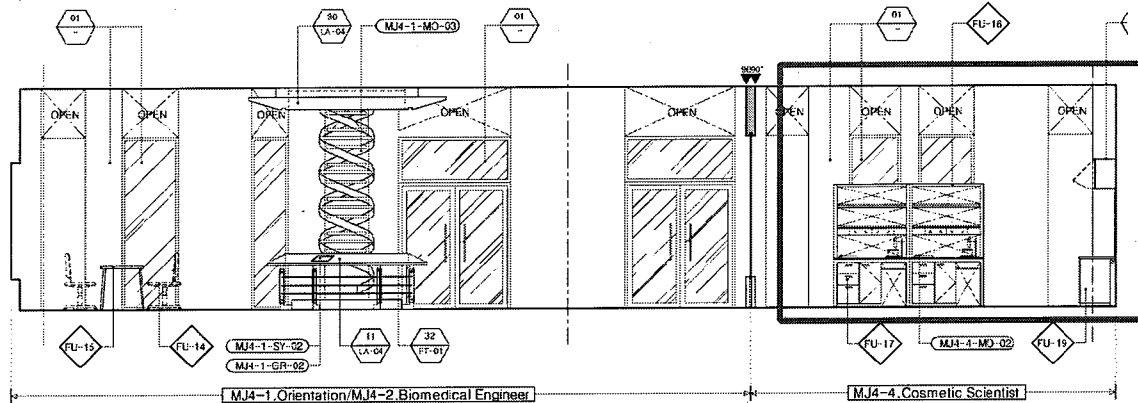
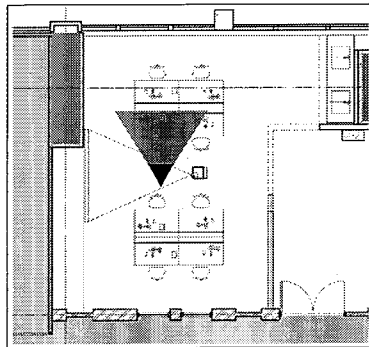
#### Experience Scenario

Time (min)	Cosmetic Scientist		
	Operating	Job Experience	Media
15	<ol style="list-style-type: none"> <li>1. Explain biomedical research field which is research about human's health and beauty.</li> <li>2. Explain Mr.Kwang(virtual client)'s request and DNA analysis result.</li> <li>3. Explain experience contents and jobs, and guide to which job the participants going to choose</li> <li>4. Hand out each job's uniform and make the participants move to experience room</li> </ol>	<ol style="list-style-type: none"> <li>1. Orientation (15min)                             <ol style="list-style-type: none"> <li>1) Listen the description about DNA analyzing service and various biomedical research field which can predict and prevent one's various potential disease through analyzing DNA, finding out each person's food, medicine reaction and genetic characteristic</li> <li>2) <b>Mission!! "Suggest Customized Health &amp; Beauty Service through analyzing DNA"</b> → With the DNA Structure Model and Monitor's analyzed DNA data, Listen the description about Mr.Kwang(virtual Client)'s analyzed DNA data result.</li> <li>3) Listen the description about Basic Information and Bio Medical center's jobs(Biomedical Engineer, Pharmaceutical Scientist, Cosmetic Scientist) and make a choice which job the participants going to choose. → Choose what each participants want or randomly assign</li> <li>4) Get each job's uniform(Lab coat) and move to experience room</li> </ol> </li> </ol>	Uniform/ Laptop/ Image Graphic(DNA)/ DNA Lighting Model/ Monitor/ DNA analysis data image(Summary Report)/
45	<ol style="list-style-type: none"> <li>1. Move to Cosmetic Scientist experience corner and make a buddy system</li> <li>2. Explain experiment equipment direction and guide safety rules</li> <li>3. DNA analysis data Check &amp; explain experiment contents → Guide to check internal DNA items of DNA analysis summary report → Making lifting lotion using natural herb oil</li> <li>4. Guide Healing Service contents</li> </ol>	<p>⇒ <b>Move to Cosmetic Scientist Corner</b> —Considering External genetic characteristic, make cosmetics using natural ingredients, minimize side effect and offer customized skin care service.</p> <ol style="list-style-type: none"> <li>1. Make herb ingredient considering external genetic characteristic as to analyzed DNA data (25min)                             <ol style="list-style-type: none"> <li>1) Making a buddy system, check experiment equipment and materials.</li> <li>2) Take a class about experiment process and safety rules</li> <li>3) Check Mr.Kwang(virtual client)'s external genetic characteristics for improving skincare of DNA analysis data</li> <li>4) <b>Making natural herb oil cosmetics(Lifting Lotion)</b> <ol style="list-style-type: none"> <li>① Put water materials into beaker except aloe vera gel</li> <li>② Put oil materials into other beaker.</li> <li>③ Heat ①, ② until 70°C putting on hotplate</li> <li>④ If ①'s temperature become 70°C, metering aloe vera gel and stir it using whisk and put it to ①</li> <li>⑤ Put ④ into ②</li> <li>⑥ Stir it as fast as possible using whisk for 2minutes.</li> <li>⑦ Stir for 10 seconds using mini blender. Repeat ⑥, ⑦ until emulsification</li> <li>⑧ Put essential oil and stir them. Put them into a case and attach a sticker</li> </ol> </li> </ol> </li> <li>2. <b>Recommend customized Beauty &amp; Healing Service (5min)</b> <ol style="list-style-type: none"> <li>1) Recommend Chiang-Mai spa resort and Thai massage service</li> </ol> </li> </ol>	Experiment KIT / Experiment equipment SET (Hot plate /Glass beaker /scale/mini whisk /mini blender / Circular thermometer /spatula /reagent spoons /spatula/ethanol /sticker)  Image Graphic (Healing Service)
60	<ol style="list-style-type: none"> <li>1. Guide the participant's experience comment presentation</li> <li>2. Introducing Smart health care product, guide the test and participant's experience</li> <li>3. Explain Biomedical technique's direction and future.</li> <li>4. Guide the career and university information</li> <li>5. Take a commemorate photo and give some notices ※Arrangement the experience equipment and reset the system</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Experience Smart Health Care &amp; Feedback (10min)</b> <ol style="list-style-type: none"> <li>1) Wrap-up the experience, gather to feedback corner and make some presentation about the experience</li> <li>2) Experience Smart health care product: Take a description about Health care product, and as long as applicants, try it on</li> <li>3) Talk about Bio&amp;Nano Technology's future.</li> </ol> </li> <li>2. <b>Job Information &amp; Commemorate photo (5min)</b> <ol style="list-style-type: none"> <li>1) Take some information about jobs and university information which is related to biomedical technology</li> <li>2) Take a commemorate photo with colleague</li> </ol> </li> </ol>	Smart healthcare Camera Image Graphic Explanation panel Job Info-guide Paper

## 06 Cluster1 Job Experience

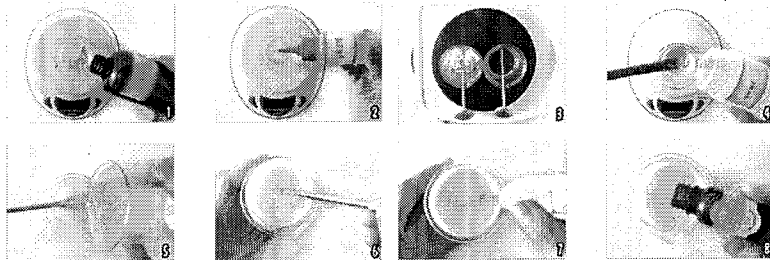
### Bio-Medical Center | Cosmetic Scientist

#### > SPACE\_ELEVATION



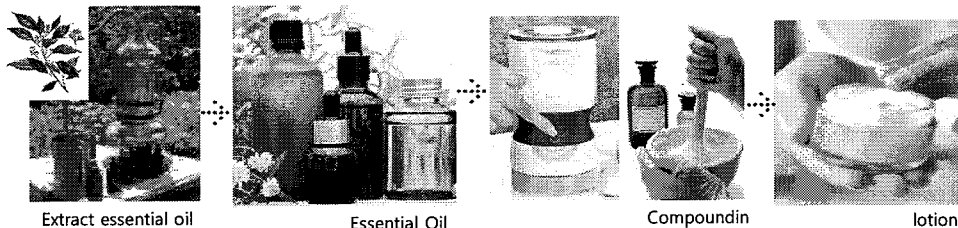
#### > Model\_Cosmetic Making Kit

##### Making Cosmetics using natural herb oil



- Water materials
  - : Hyaluronic Acid /Aloe vera gel
- Oil materials
  - : Jojoba oil/ Apricot kernel oil /Almond oil/ Shea Butter /Olive wax
- Essential oil
  - :lavender / Grape fruit / Geranium

##### Making Cosmetics using Essential oil



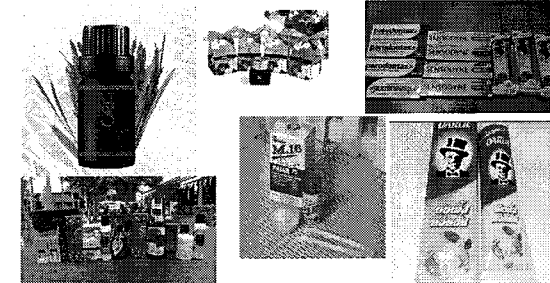
Extract essential oil

Essential Oil

Compoundin

lotion

##### Prevent Disease & Herb Oil for Treatment



Herb oil for prevention disease and treatment

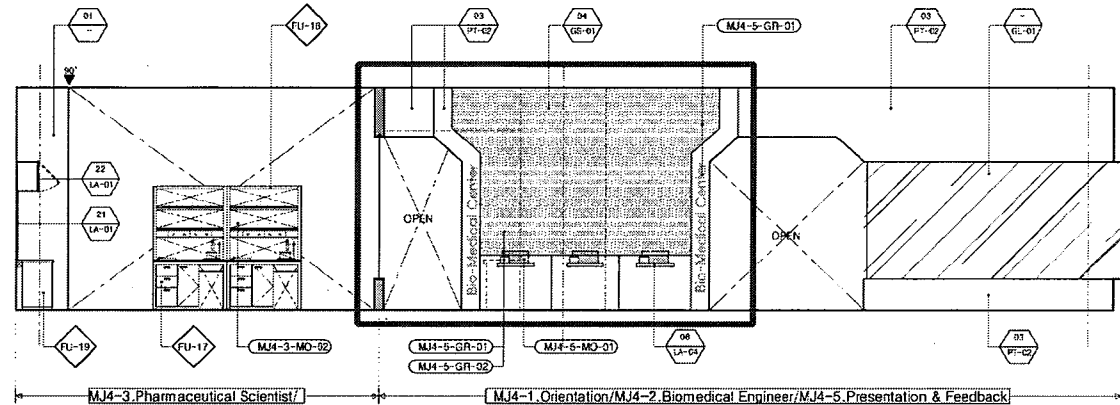
- :Lemon grass oil
- Anti-dandruff shampoo
- :Basil oil – hives drug
- :Basil leaves – hives remedy
- :Ginger – Muscle relaxation
- :Guava leaves – Dental health



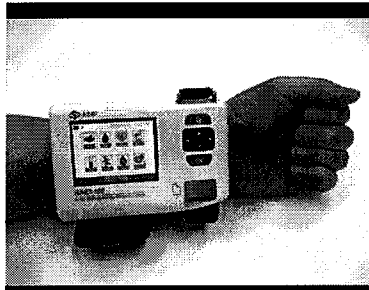
※ The above contents are planned and can be changed during the design process

**Bio-Medical Center** | Presentation And Feedback

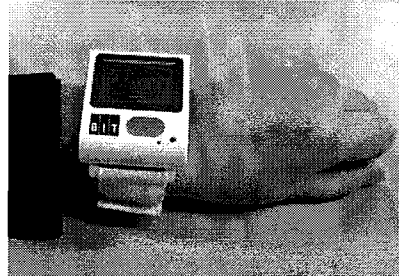
The floor plan of the 1st floor shows a large main hall with a central circular area. The stage is located at the top, with a large screen and seating area. The main hall is divided into several sections, including a large open area for seating and a smaller area for a stage. The plan also shows various rooms, including a large hall, a stage, and several smaller rooms. The layout is designed to accommodate a large number of attendees for the convention.



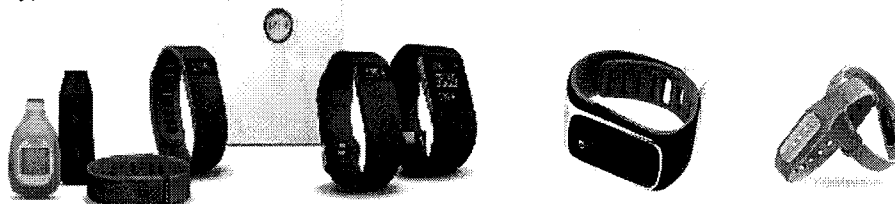
## Smart Health Care



Band Type



There are several wearable sensor devices that can be used in ubiquitous healthcare especially in monitoring the health status of the patient while they are away from the hospital and even in the hospital.



## JOB INFO GUIDE

[illegible][illegible]

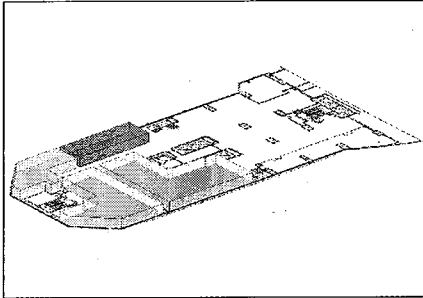
உயர்நீதிமன்றம் இரண்டு தீர்மானங்களை பிறப்பித்தது. அதன் கீழ் காவல்துறை அதிகாரிகள் மீது நடவடிக்கை எடுக்கப்படும்.

[illegible]

※ The above contents are planned and can be changed during the design process

# 07 Cluster2| Career Exploration & Planning

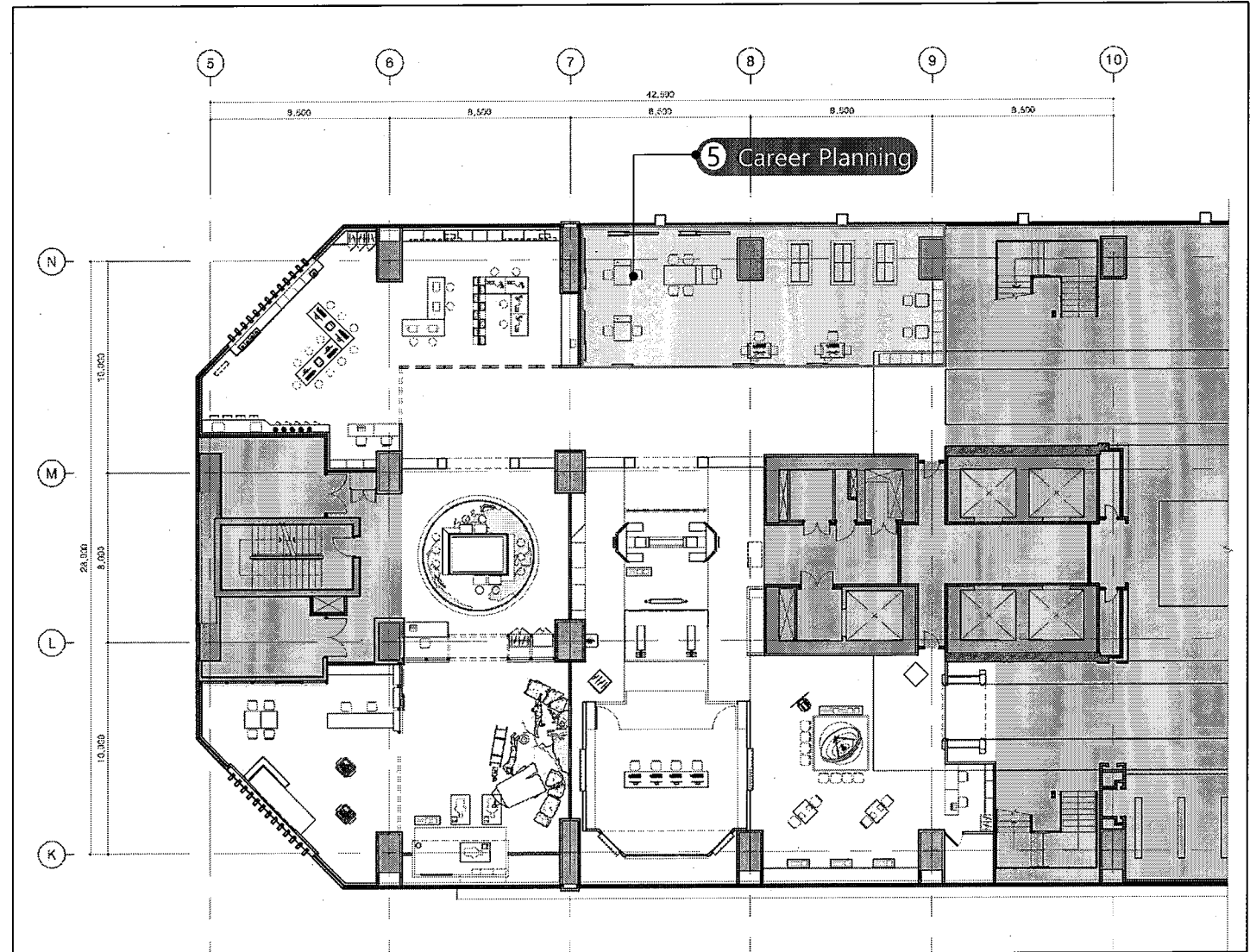
| Key Plan



■ Space Summary

Area	Corner
<div>5</div> Career Planning	Who am I?
	Future Jobs
	JOB Archive

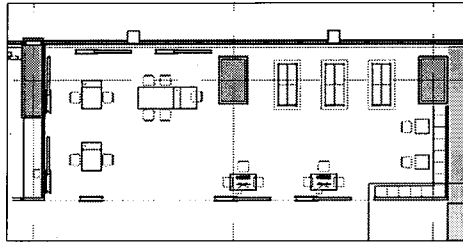
■ Floor Plan



## 07 Cluster2 Career Exploration & Planning

### — Career Planning

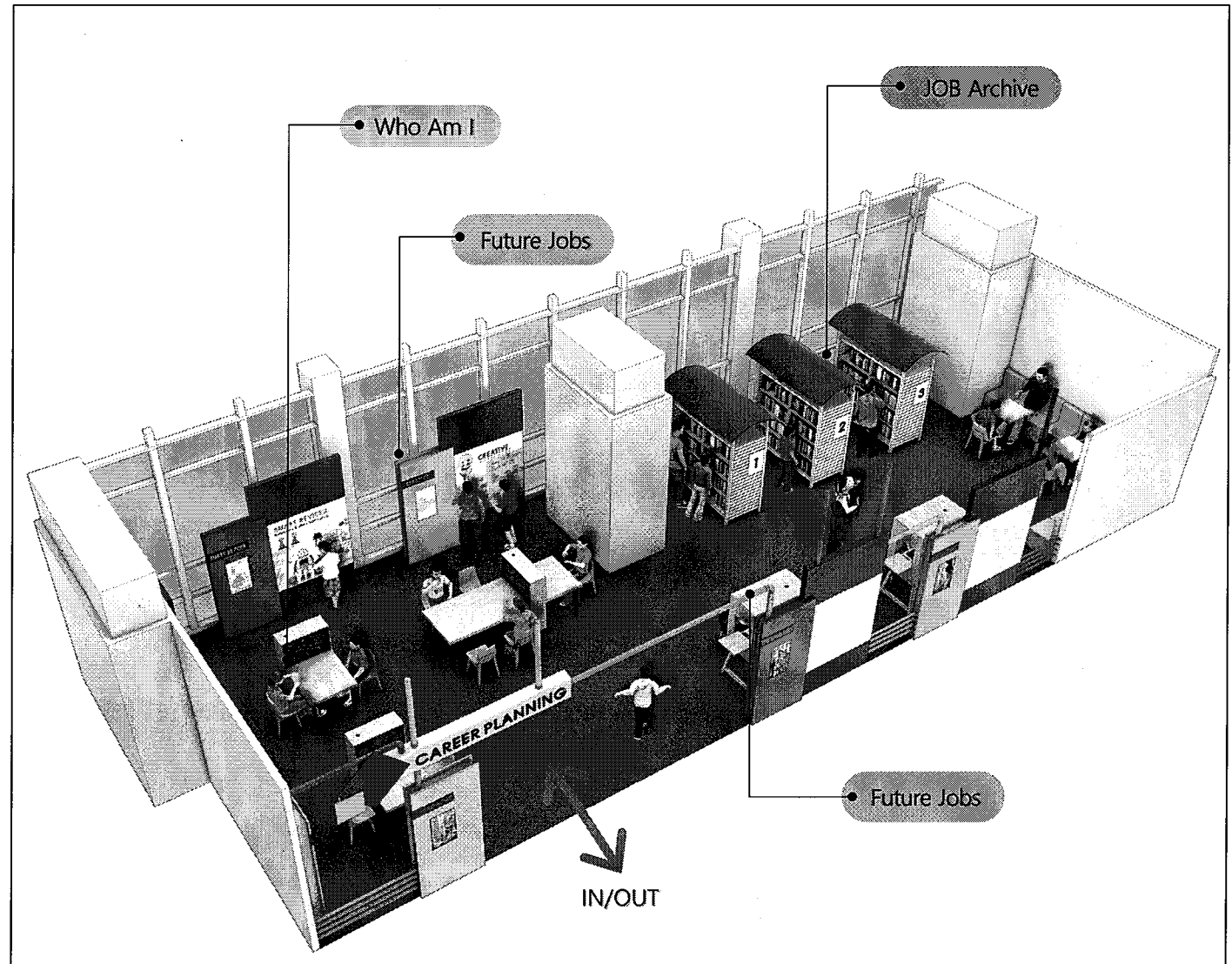
#### | Floor Plan



#### ■ Action Summary

Operation Plan	Time	No limit
	Capacity	15-20p at the same time
	staff	2p
	Area	140.94 / 42.63py
Main Acting	Who am I	Catechetical test using 8 multiple intelligence theory /Make portfolio
	Future Jobs	Introducing promising job /Information searching about (Thailand) domestic and foreign celebrities in relation to promising jobs, interview video, company information, and role models
	Job Archive	Read the books related to jobs and career information

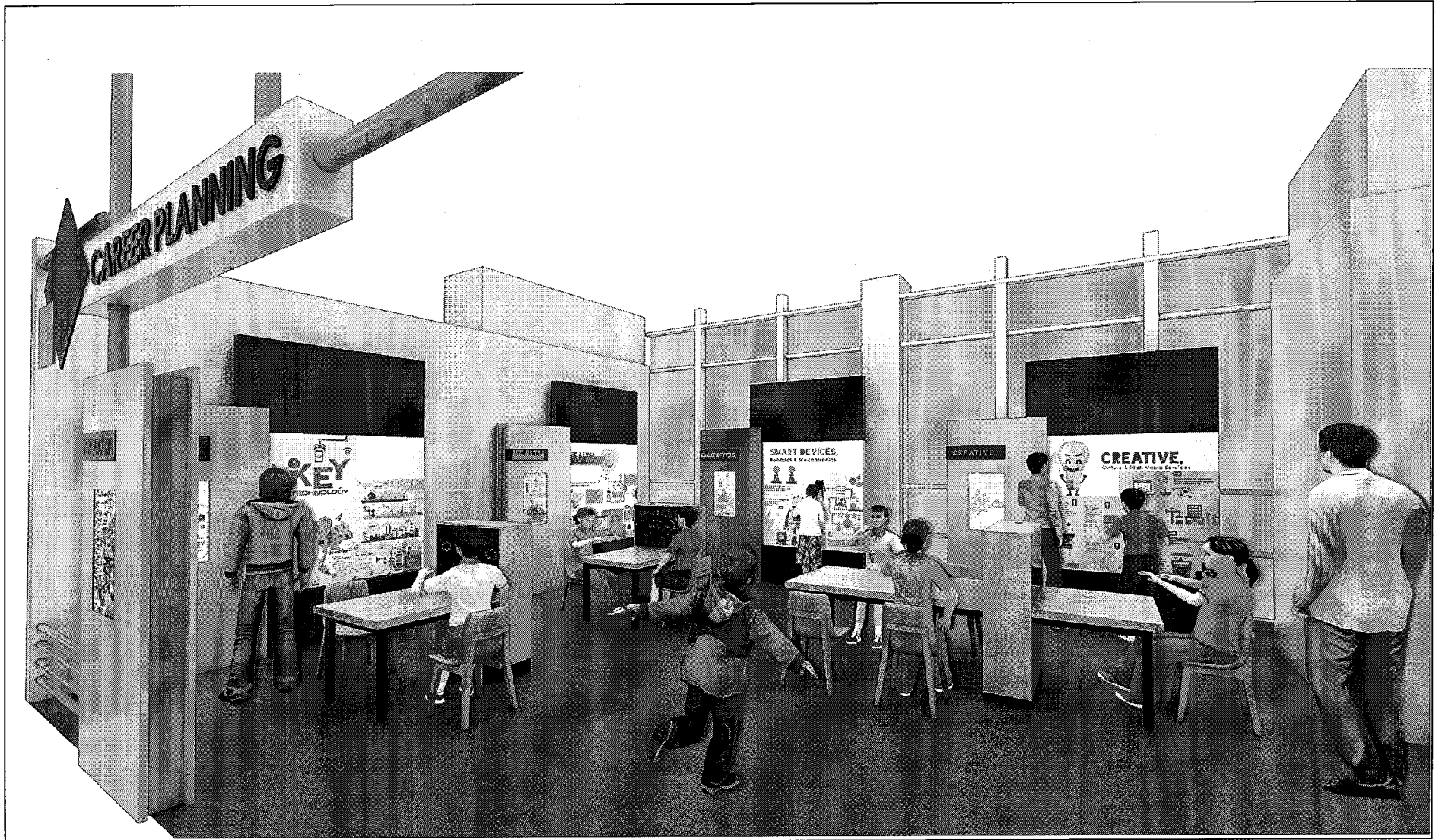
#### | Isometric



## 07 Cluster2 Career Exploration & Planning

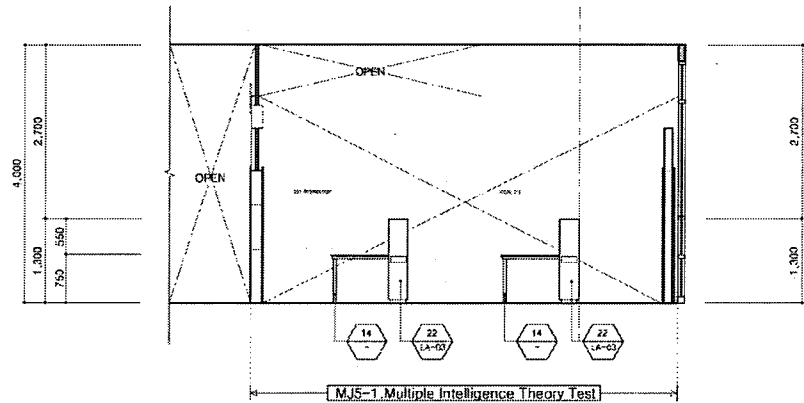
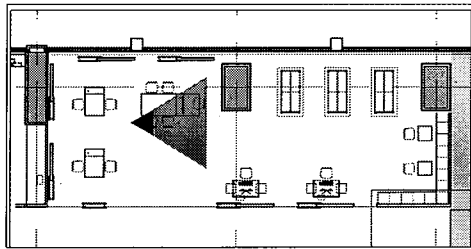
### — Who am I / Future Jobs

| Perspective



# —Who Am I

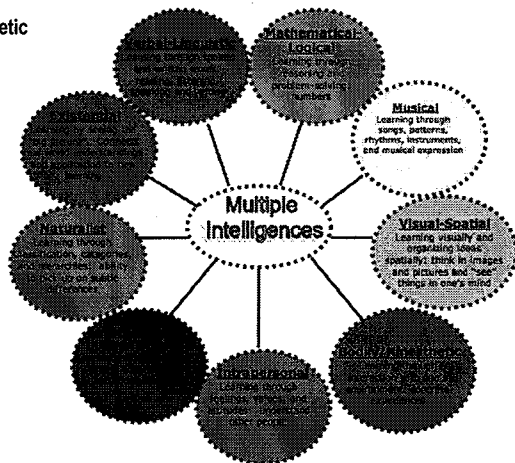
## > SPACE \_ ELEVATION



## > CONTENTS\_Multiple Intelligence Theory

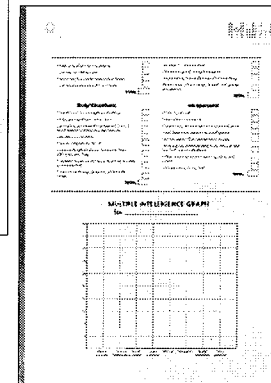
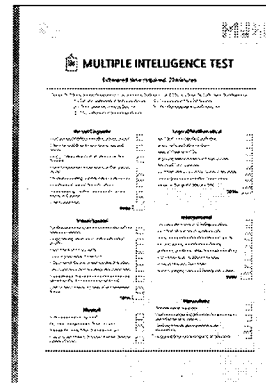
### Multiple Intelligence Theory \_ by H.Gardner

- ① linguistic
- ② logical-mathematical
- ③ spatial
- ④ bodily-kinesthetic
- ⑤ musical
- ⑥ interpersonal
- ⑦ intrapersonal
- ⑧ natural

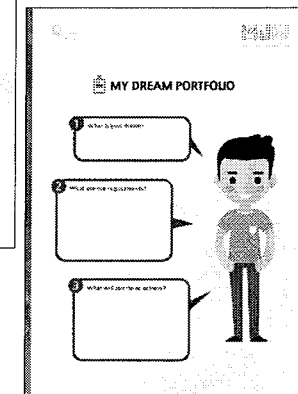
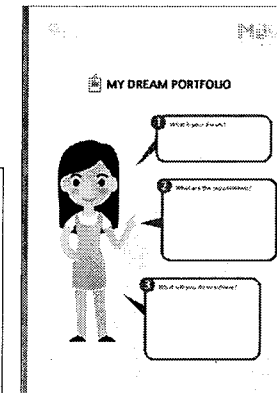


## > SIGN\_ WORK PAPER

### Multiple Intelligence Test



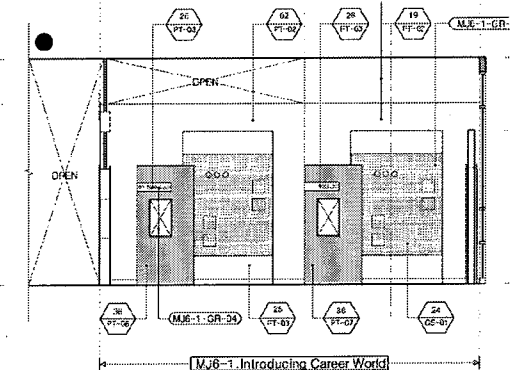
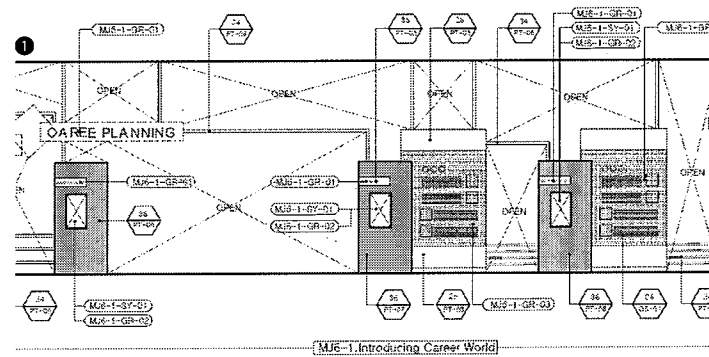
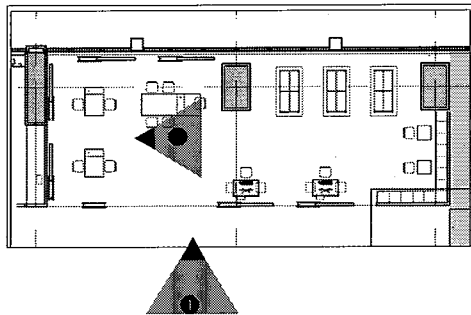
### Portfolio



## 07 Cluster2 Career Exploration & Planning

### — Future Jobs

#### > SPACE \_ ELEVATION



#### > Digital Monitor / Still Image

##### STI \_ Future Jobs



Sports Recording Analyst Researcher

Crime Victim Career Worker

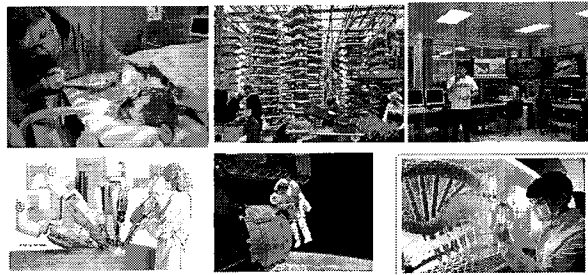
Medical Science Liaison (MSL)

Genetic Counselor

Cytotechnologist

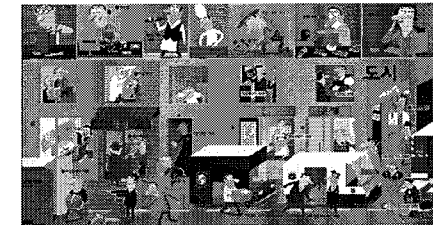
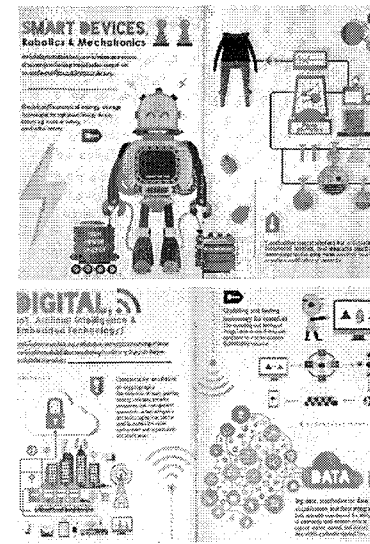
IoT developer

Animal Health Technician



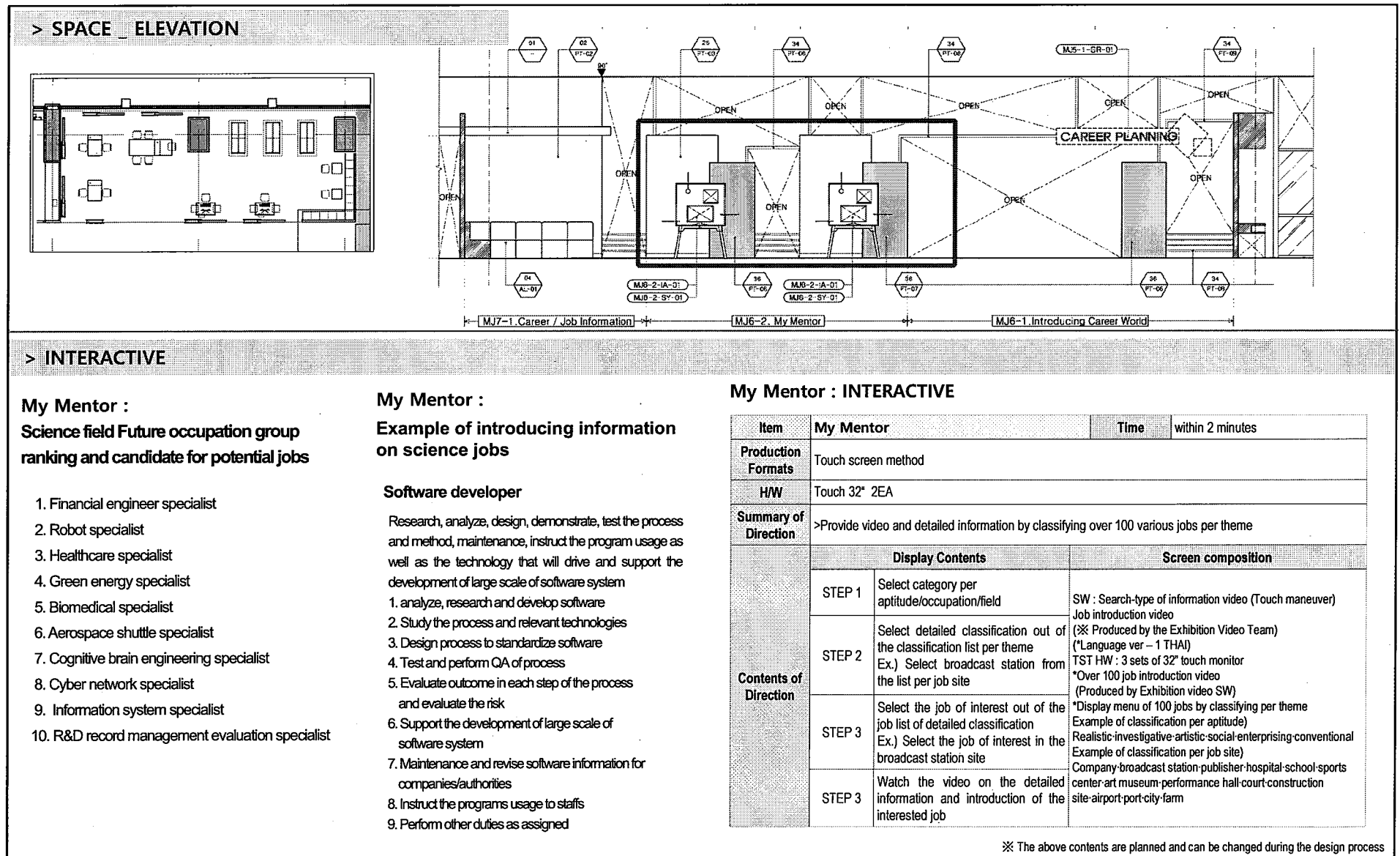
#### > SIGN\_Image graphic/Lighting Panel

##### Introducing Career World



※ The above contents are planned and can be changed during the design process

## Future Jobs



## 07 Cluster2 Career Exploration & Planning

### — Future Jobs / Job Archive

| Perspective



# 08 Management Planning

## | 1. Operating Plan

### Dwell times

- 09:30 ~ 17:30

> 5 times a day [Job Experience 1times 60min]

① 09:30-10:30

② 11:00-12:00

[Lunch]

③ 13:00-14:00

④ 14:30-15:30

⑤ 16:00-17:00

### Ticketing System

- Pre-reservation → Site Payment

[Site purchase subject to remaining tickets and non-reserved tickets]

### Staff Plan

Item	4/5F Mini Job World [Job experiences in 4 sites]	4F Career Planning	[max]
<b>Operator</b> -Practical training from relevant professionals -Retired professionals	-Total 12people allocated per site < 4sites x (2operator+1staff) = 12per. >	-	12
<b>Staffs</b> -Trained casters -Lead experiential trial	-	-Guide exhibit introduction -Management of Emergency Evacuation etc.	2
Total			14per.

### Operating Process [EXAMPLE]

