Installation of River Information Display System

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ABSTACT

As land development progresses, land use near rivers is increasing. Various facilities such as riverside parks and roads that cross rivers are in operation. In addition, the number of people and vehicles using the same is increasing. In response, 16 river information systems have been installed and operated. However, as times change, improvements are needed to increase utilization. We analyze the current installation status and expressions, select the installation area in the high utilization area to improve the system efficiency, and present the presentation content with high visibility

1. BACKGROUND

The review and analysis for the installation and operation of the river information display system was established in `` Building a hydrological information display system (Hangang Flood Control Center, Ministry of Construction and Transportation, 2007) '', but each flood control station was installed in accordance with the plan of the report. However, to date, the number of installation points is far shorter than planned, and its recognition and utilization are not high. Therefore, this study examined the adequacy of the installation site and confirmed whether it can provide useful information stably to the general public who uses the information.

2. Overview of River Information Display System

Necessity and Status

1	Occasional provision of informational flood and stream data to relevant agencies / publics	✓Provide information, installation point selection criteria, and installation instructions
2	93 places of establishment (plan) 15 installations in operation → 24% of planned	• Realistic issues like lack of budget • Focus on installation and lack of information transmission method and contents preparation ✓Low residents' satisfaction with the provided information

System Operation Program

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Usually Displayed contents	• Set approximately 10 seconds per display • Consists of promotional contents except the weather information (1 weather information, 15-20 promotional texts)
Contents Displayed During the Flood	• Present level of warning, warning and alarm level of installation site (Displays the current depth as a graph)

| System schematic | Operation program | example |
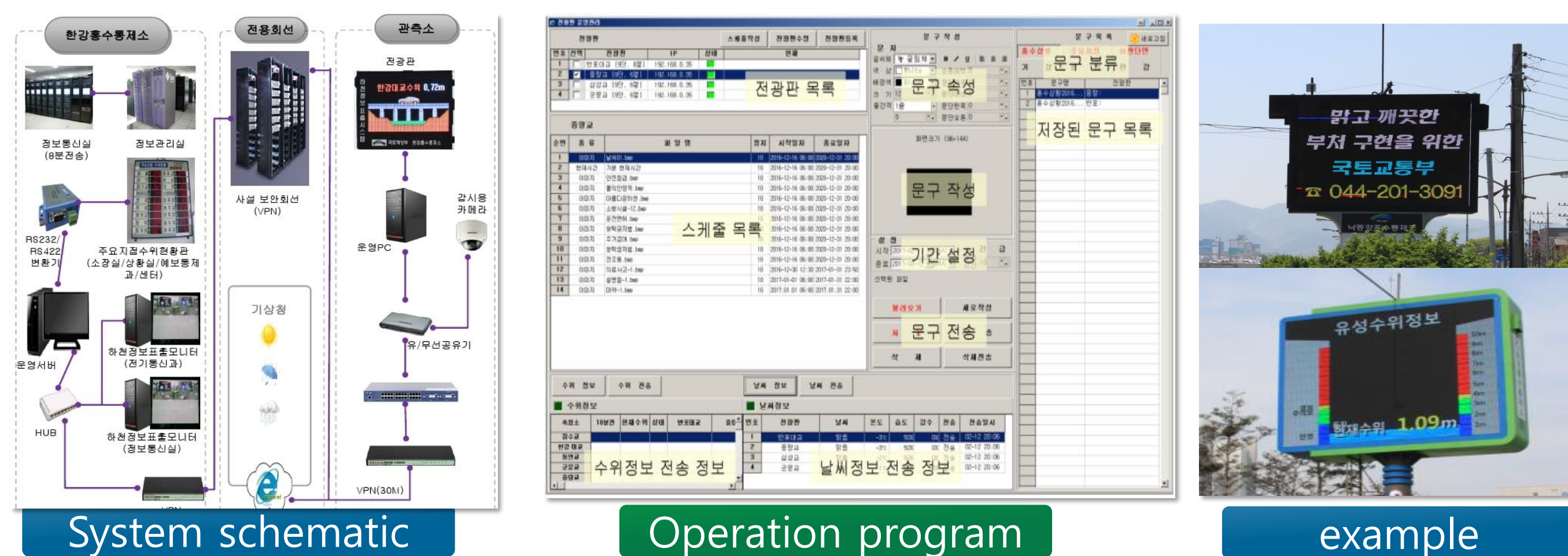
How to Select the Installation location and Size

	Rivers, Riverside Parks	Roadside
User	Walker	Driver
Display time	long	Short
Purpose	Provide various information	Provide fragmentary and repetitive information
Type	Video or live broadcast	Simple text or images
Size	Large Display Board (Monitor)	Traffic billboards across the road

Status	Need for improvement
Display Board Program Some differences for each flood control station	Need to standardize considering local characteristics, installation location and purpose of installation
Handwork of transition to presentation (Usual→Flooding)	Need to add some automation functions considering the nighttime or sudden flood

3. Improvement of River Information Display System

ITEM		Contents
User	Walker and Driver	• Focus on the ability to proactively control access to areas of potential flooding • Providing information in text or graphic form to prevent driving
	Residents nearby	• Rainfall radar information, flood forecasting CCTV video
Oper ation	Attention stage	• Provide news information about current forecasts and other damages • Recognizing the need to restrain activities and prepare for risk situations in rivers
	Warning stage	• Provide information to evacuate specific risk levels, risk arrival times, evacuation methods and evacuation routes in advance
	Disaster Stages	• Minimize casualties by repeatedly providing information on shelter and evacuation routes in the form of disaster warning broadcasts
	Radar image	• Radar video playback from past 1 hour to present(easily recognize the direction of rainfall)
Infor amti on	Flood	• Use all available audiovisual features to help you understand the risk
	Non-flood	• roviding various disaster prevention information and living information other than flood • Focus on disaster prevention safety education, including flood preparation, with sharing of information from other agencies
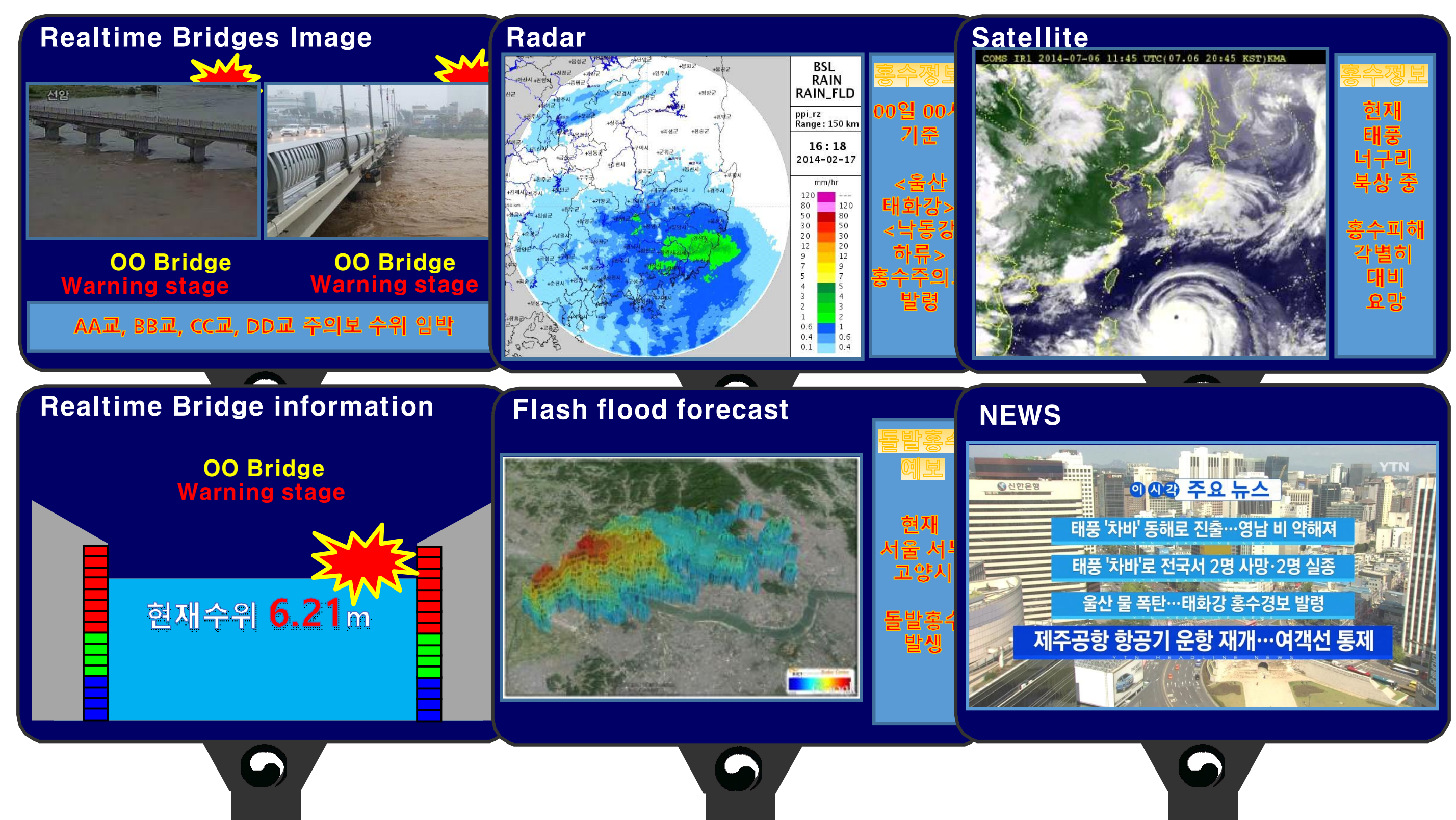
Stasus of Display system

Catch-ment	Station	Module sizw (mm)	Module array	Number of modules	Display size
Han river	Jingranggyo	320	6*9	108	2880*1920
	Banpodaegyo	320	6*9	108	2880*1920
	Gunmoongyo	320	6*9	108	2880*1920
	Sansunggyo	320	6*9	108	2880*1920
Gum river	Gumganggyo	160	12*20	640	3200*2560
	Mannyeonggyo	300	16*20	640	6000*4800

Standard of River Information Display System

	LARGE	SMALL
Display Color	Full Color	Full Color
Module Size	300mm X 300mm	160mm X 160mm
Module array	16 columns of 20 rows	16 columns of 20 rows
Number of modules	640 (duplex)	640개 (duplex)
Display size	(W)6,000 X (H)4,800 mm	(W)3,200 X (H)2,560 mm
System size	(W)6,400 X (H)5,200 X (D)1,500 mm	(W)3,400 X (H)2,960 X (D)1,000 mm
Resolution	(W)320 X (H)256 = 81,920	(W)320 X (H)256 = 81,920

CONCLUSION

In the case of installing River information display system, it is more useful to be able to provide various information besides flood information rather than providing fragmentary and repetitive information when installed in river park. To this end, it was expected to have display functions such as video and real-time broadcasting in addition to text and images. Therefore, it is judged that the form of large electric signboard which is more functional than small is more effective. In addition, when rivers are used as living spaces, it is necessary to consider the transmission of hydrologic information in two situations, usually and during flooding. Since the flood season must provide realistic information so that the risk of flooding can be felt more easily and quickly, it is necessary to set the presentation method and schedule to use all possible audio-visual functions so that the danger can easily be noticed.

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