Shorten no-information period immediately after the onset of an earthquake

Disaster Prevention and Reduction Research Committee

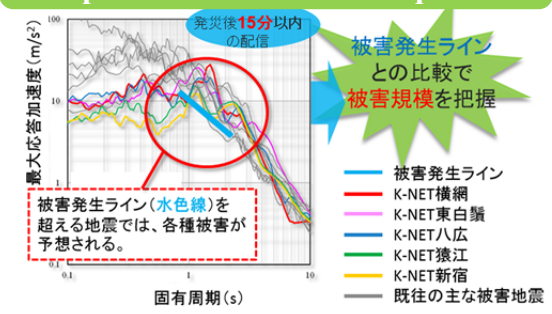
We develop information sharing systems that can provide constantly changing but necessary disaster response information to infrastructure administrators at the proper times to accelerate disaster responses and realize early recovery and restoration in disaster-hit areas.

Social background and problems

- Prompt gathering of information is essential for engaging in proper initial responses after the onset of an earthquake. Yet, there is a period during which only limited amounts and types of information becomes available (no-information period) immediately after the onset of an earthquake.
- To swiftly identify conditions in wide areas after the onset of a major earthquake, a system to gather information must be established using already available facilities and technologies, such as strong earthquake observation networks, CCTV cameras, and artificial satellites.

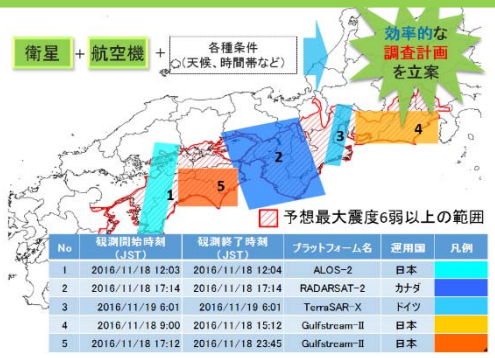
Content of this study

Automatic distribution of information upon the onset of an earthquake



Development of functions to automatically acquire records of strong earthquakes and automatically

Efficient use of SAR images

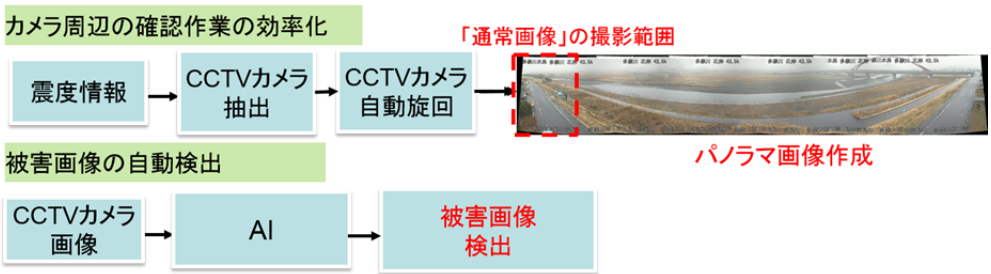


No	観測開始時刻（JST）	観測終了時刻（JST）	プラットフォーム名	運用国	凡例
1	2016/11/18 12:03	2016/11/18 12:04	ALOS-2	日本	
2	2016/11/18 17:14	2016/11/18 17:14	RADARSAT-2	カナダ	
3	2016/11/19 6:01	2016/11/19 6:01	TerraSAR-X	ドイツ	
4	2016/11/18 9:00	2016/11/18 15:12	Gulfstream-II	日本	
5	2016/11/18 17:12	2016/11/18 23:45	Gulfstream-II	日本	

1) Development of efficient observation plan proposal system by combining satellite SAR, disaster response helicopters, aircraft SAR, and other technologies
2) Development of technologies to improve the efficiency of SAR image interpretation

Functions to extract images of damages from images captured by CCTV cameras

1) Development of a technology to automatically rotate CCTV cameras installed at areas hit by intense seismic motion to create panoramic images
2) Development of a technology to automatically extract images of damages from images captured by CCTV cameras



Contribute to help prompt restoration of social infrastructures by eliminating no-information periods and areas after the onset of a major earthquake.

☞ Relevant articles

- Development of a method to create panoramic images even during night time using the rotation function of CCTV cameras
- Emergency interpretation of sediment damages using SAR loaded on artificial satellites
- Development of technologies to instantly gather, compile, and share the information of damages on infrastructures