



◆Outline

After the Great East Japan Earthquake, a vast amount of voice call attempts—50 to 60 times the normal volume—was observed in some mobile carrier networks. They generated an unprecedented level of traffic (congestion) in the networks, and so limited wide-area users to communication services for a long time. This service unavailability was caused by mainly exceeding prepared capacity of call processing resources in the networks due to explosive concentration of call attempts. Since severe earthquakes induced by the Great East Japan Earthquake become major concerns, technical countermeasures to relieve service congestion caused by the shortage of call processing resources in telecommunication networks, including mobile networks,

are highly expected. To address this issue, we will research and develop new networking technology applicable for current and next generation networks, and construct a technical test environment to validate the effectiveness of the technology. A primary target of technical test environment construction is to replicate both normal condition and wide-area congestion after a disaster in an actual mobile network. Like a commercial mobile network, thus, it will be equipped with mobile terminal and access network emulators, which allow producing normal and congested traffic condition on a scale similar to half million subscribers' voice communication, mail, and rich content access usages, communication service emulators, e.g., media servers, 3GPP compliant communication service control system, and other systems essential to implement this R&D attempt. Two experimental sites consisted of various test systems described above will be deployed in Sendai and Yokosuka. The experimental site in Sendai will be constructed using the test bed to be prepared by the National Institute of Information and Communications Technology (NICT). Since at least four sites are required to validate proper operations of alternative route selection mechanism in the process of failure recovery in the inter-site network, two shrunk experimental sites will also be built in Sendai. To develop the new technology and validate its effectiveness, optimum research collaboration with other research projects will be considered, and domestic and foreign trends of relevant technologies will be investigated. In addition, these technical challenges will be worked out in cooperation with related organizations seeking their realization in future networks and acceptance as international standards.