Hydrologic Applications of Remote Sensing
～For Advanced and Efficient River & Basin Management～

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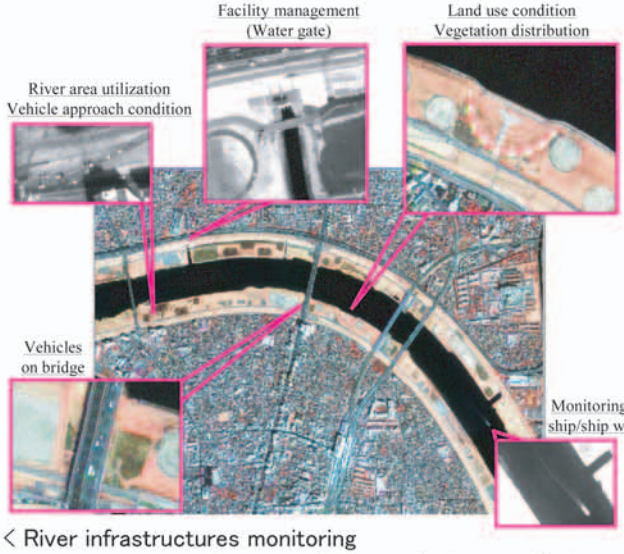
In order to make a suitable river & water-resource planning and an integrated management of them, it has been widely recognized that we need to consider a perspective of basin-wide spatial management of land with proper & sustainable hydrologic cycle other than the perspectives of flood control and water utilization.

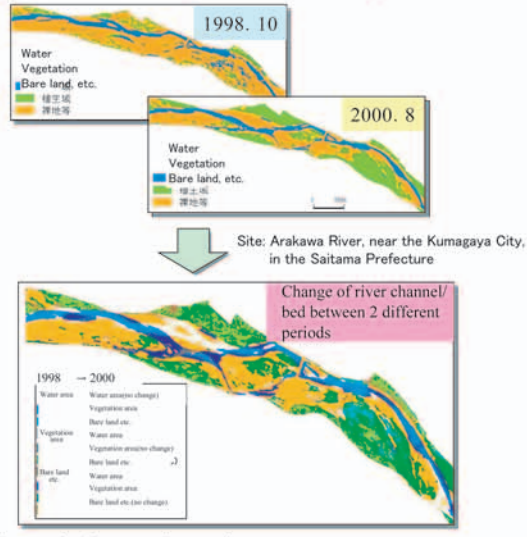
To realize this new concept in real administration, we need to monitor and understand the real situation of river & hydrology in a river basin, including natural disasters.

Remote sensing is expected to have the potential to meet the new needs for river and water-resource management when combined with existing ground-based hydrologic observations.

1. Collection of information on river and its infrastructures for daily investigation/ management with high-res. sattelite

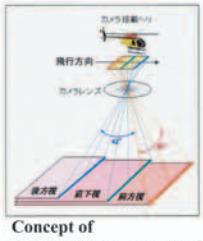


< River infrastructures monitoring
by super-high-resolution sattelite image >

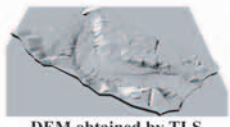


< River channel change detection
by super-high-resolution sattelite image>

2. Collection of river information with airborne ditital line-image sensor

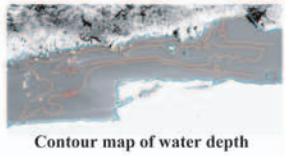


Concept of
Three Line Scanner (TLS)

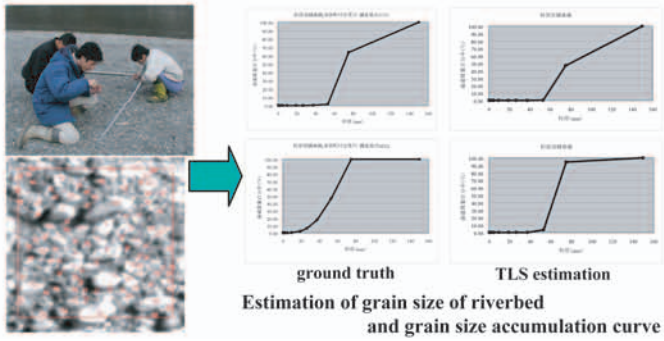


DEM obtained by TLS

Topography contour map by TLS



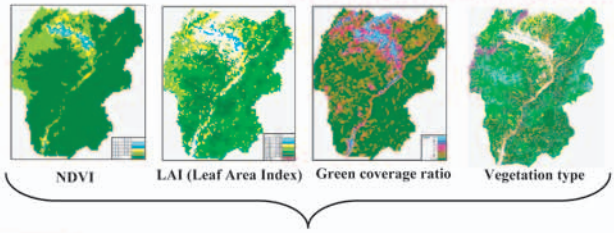
Contour map of water depth



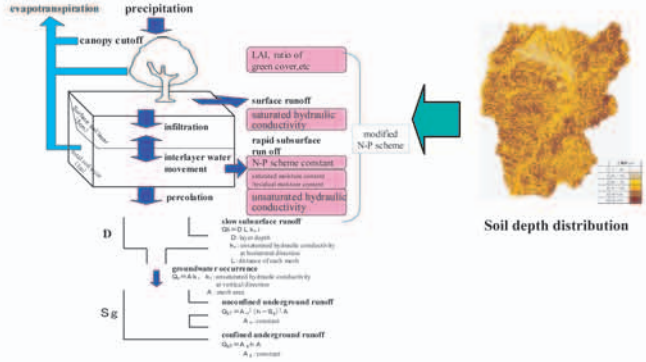
ground truth　　TLS estimation

Estimation of grain size of riverbed
and grain size accumulation curve

3. Monitoring & modeling of hydrologic cycle on a river-watershed scale



NDVI　LAI (Leaf Area Index)　Green coverage ratio　Vegetation type



Parameters estimation
in basin-wide hydrologic models

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