

For Immediate Release

**Towards Regional Revitalization via Invigoration of Forestry**  
**Commencement of quantitative analysis system for forest sources in**  
**Kyotamba, Kyoto**

Sumitomo Forestry Co., Ltd. (President and Representative Director: Akira Ichikawa; Head Office: Chiyoda-ku, Tokyo; hereafter “Sumitomo Forestry”) announced the full-scale operation of a quantitative analysis system for forest resources (hereafter “the system”) in March this year, after it was contracted by the town of Kyotamba in Kyoto’s Funai District for consultation regarding the creation and operation of such a system.

The system, which aims to develop the region’s forestry industry through sustainable forest management, is being implemented as part of Kyotamba’s initiative to systemize the quantitative analysis of forest resources.

The system utilizes advanced aerial survey technology, which combines aerial photographs with laser surveying<sup>1</sup> to obtain high-precision forest resource image data (such as tree species, height, tree population, and growing stock). The data is then analyzed and utilized to accurately grasp the volume of forest resources for suitable forest management.

In addition, the introduction of a network linking the town of Kyotamba to the Kyotamba Forestry Cooperative will allow privately-owned and state-owned forests within the target region to share forest resource image data. The system is expected to contribute to the planning and implementation of highly effective plans for logging and for constructing forest roads.

With the on-going trend for regional revitalization, utilization of forest resources as part of the effort to invigorate local communities is being carried out all over Japan. Sumitomo Forestry has been utilizing its experience and expertise obtained over many years of managing company-owned forests to provide forestry consulting services to many towns and cities. Sumitomo Forestry Group hopes to continue utilizing its knowhow to contribute towards invigorating Japan’s forests and forestry industry, as well as in regional revitalization.

1. Laser surveying: A laser scanner attached to an airplane emits a laser beam which reflects off the earth’s surface. The time for the laser to travel back indicates distance with the earth. A Global Positioning System(GPS)/Inertial Measurement Unit (IMU) (a measuring system for position and posture) is used to gain the aircraft’s position, enabling the precision measures of elevation and forests. (excerpt from the Geospatial Information Authority of Japan’s homepage)

### **Events leading up to the development**

The town of Kyotamba aims to generate employment and promote settlement of forestry workers by making use of forests, the region’s resource, to develop forestry. At the same

time, forestry in Japan faces a few common issues, such as inadequate forest maintenance during thinning of forests ready for harvesting; increasing numbers of forest-owners growing older and not residing in the same location<sup>2</sup>; and difficulties in coming to agreements due to uncertainty regarding forest boundaries. Kyotamba is no exception and has been looking for solutions to these issues.

To solve these issues related to forestry, and provide an important information infrastructure for improving the efficiency and sophistication of the region's forest management, Kyotamba invited applications to implement a quantitative analysis system for forest resources. Sumitomo Forestry was selected to develop this system based on factors such as the quality of its proposal and its technical expertise.

2. This refers to forest-owners not residing in the same town or city as where the forests are located.

## **Overview of the system**

The system comprises a mapping system utilizing geographical information such as aerial photographs and data from laser surveys, and a numerical system processing numerical information on forest resources.

## **Features of the system**

- Through advanced aerial surveying technology, which combines aerial photographs with laser surveying, it is possible to obtain high-precision data on the current status of the forest. (Fig. 1)
- In addition to information that can be obtained from forest registration, by building a database for newly-segmented forest areas (a section of forest that can be classified separately from the surrounding forest with virtually the same type of tree species, age, and growth), a detailed understanding of the forest can be obtained and the information utilized. (Fig. 2)
- The numerical system uses growth logic to predict the volume of forest growth, and automatically updates the database, thereby ensuring the data's long-term accuracy.
- The most up-to-date data can be entered to reflect in real-time the results of thinning and reforestation.
- Data obtained by laser surveying can be used to determine tree height and population, which can then be put to practical applications in forest management, such as simulations of the forest's growth, and forecasting harvest volumes.
- Detailed topographic data from laser surveys can be used in simulations to automatically design work roads and forest roads for thinning sites. (Fig. 3)
- By consolidating data of past operations, results of past logging can be centrally managed within the system.

## **Advantages of implementing the system**

- The forestry database, shared over a common network between Kyotamba Town Office

and Kyotamba Forestry Cooperative (which are responsible for forest management), can assist in the generation and sharing of forest maintenance plans as well as plans for establishing forest roads.

- By utilizing high-precision data on forest resources, time and effort for on-site surveys and checks are expected to be reduced.
- Besides improving the accuracy of data on forest resources and optimizing operations, it is also possible to increase the sophistication of forest management using various applications.

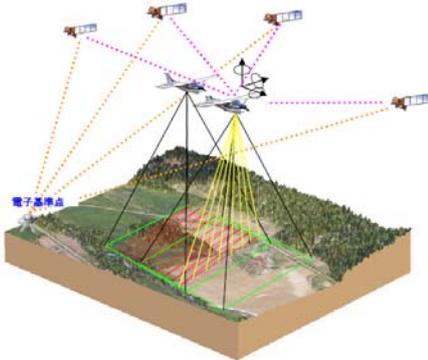


Fig. 1: Aerial laser surveying



Fig. 2: Information on newly-segmented forest areas

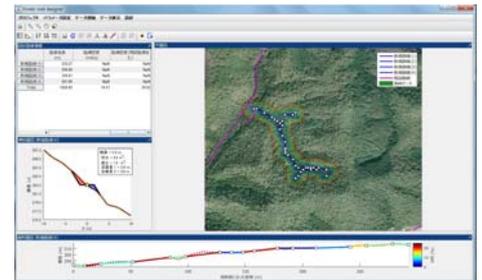


Fig. 3: Simulation of forest road design