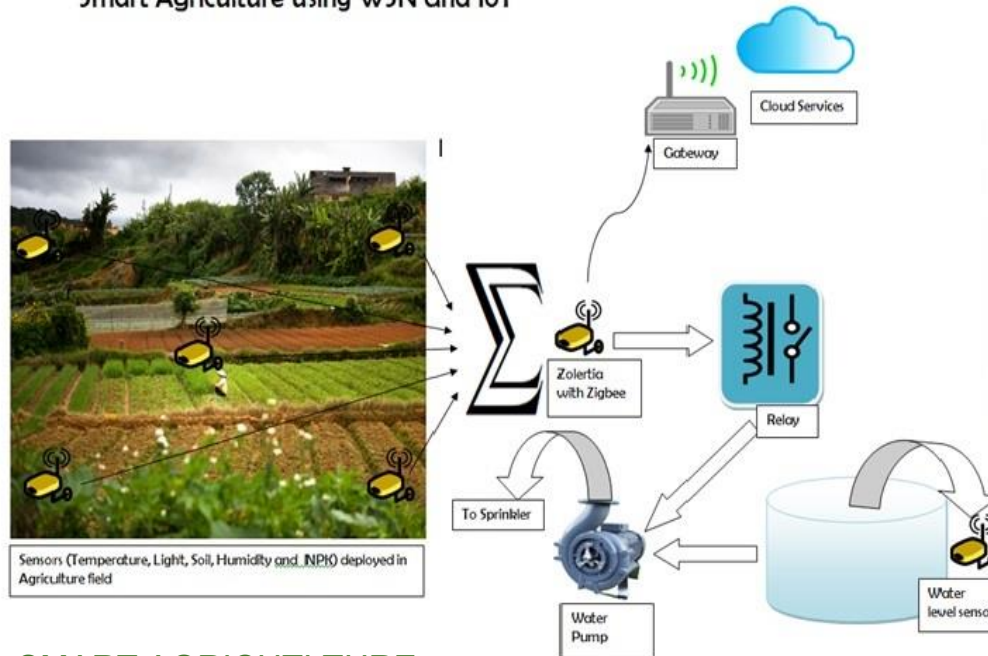


Smart Agriculture using WSN and IoT



SMART AGRICULTURE

We deploy various sensors in the farm to collect various environmental and soil characteristics such as temperature, moisture, pressure and NPK etc. and send them to gateway and then on to server for storage and analysis. The monitoring S/W will then actuate relays based on the sensor values to automatically switch on/off pump, sprinkler and such other units. This smart flow will reduce manual work and associated errors and guesswork out of the system.



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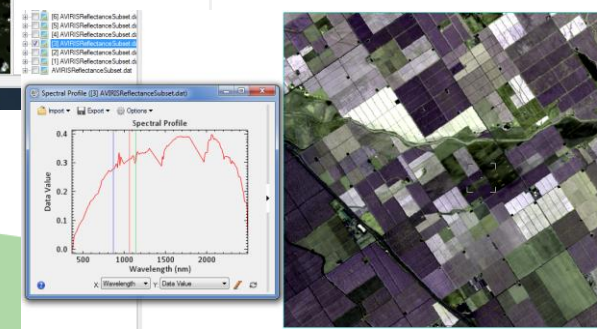
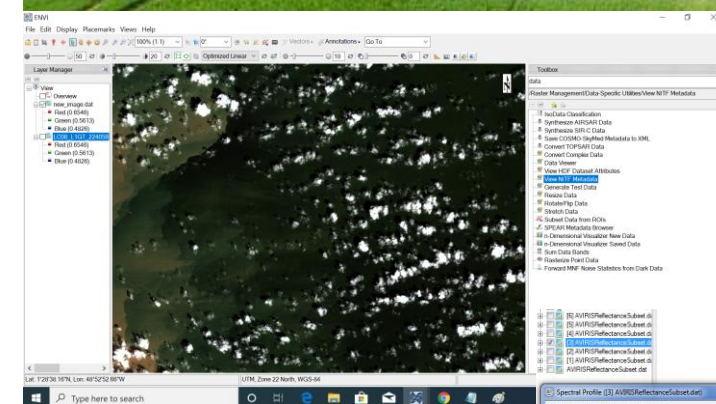
Email: sales@ncs-in.com

CONSULTING PRODUCT DEVELOPMENT PROJECTS

Wired & Wireless network expertise

Nihon Communication Solutions Pvt. Ltd. is a Bangalore based company engaged into providing innovative and Enterprise Computing solutions for business worldwide. At NCS we are committed to helping our customers reduce the time and cost of developing more reliable, innovative and competitive products. Our products and solutions are ideal for academic, research and education domain. We cater to development in wired and wireless technology domain.

Drone based Hyperspectral Imaging for Precision and Smart Agriculture



Technology at work for you

Precision Farming and NCS

India has been traditionally dependent on agriculture. However, while around 60–70% of Indian population (directly or indirectly) depends upon Agriculture sector but currently it contributes to only 16–17% of the GDP. Studies have shown that one of the main reasons for such a low productivity in agriculture sector being that it has been largely a traditional farming.

To address low yield due to traditional farming, Nihon Communication Solutions Pvt. Ltd, has come up with a revolutionary solution, wherein the farm lands are characterized using Hyperspectral SpectroRadioMeter imaging and then using well known techniques, the land characterization can be used for precision agriculture, resulting in high yield, optimized farming, accurate predictability and consistency in production.

SPECTRORADIOMETER

An advanced Hyperspectral imaging RadioSpectroMeter camera is mounted on the professional Drone. The Drone also carries an Enhanced N-mote kit from NCS for on-board processing. This will ensure sweeping of the farm land with wavelengths from 280nm to 2500nm, with resolution ranging from 2nm to 10nm. No moving parts and hence superior reliability. Rechargeable batteries are included.

PROFESSIONAL DRONE

- Super low latency for ultra-quick response.
- Real-time data logging
- Built-in 32GB memory
- SD card and USB interface
- Battery: 9000-16000mAh
- Manual, Semi and fully automatic operation
- Failsafe communication with RC, Telemetry and GCS communication
- With GPS and high-resolution time stamping for accurate mapping

Advanced analysis Software

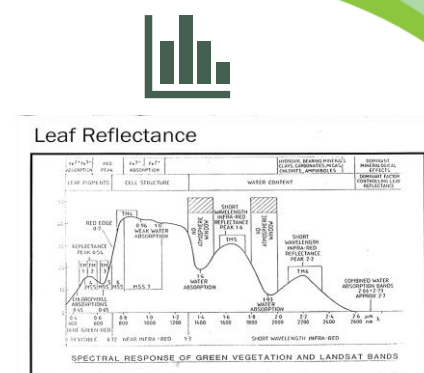
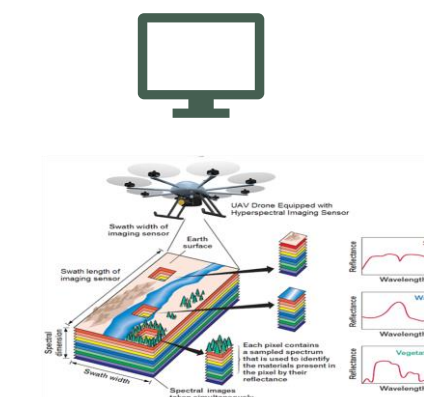
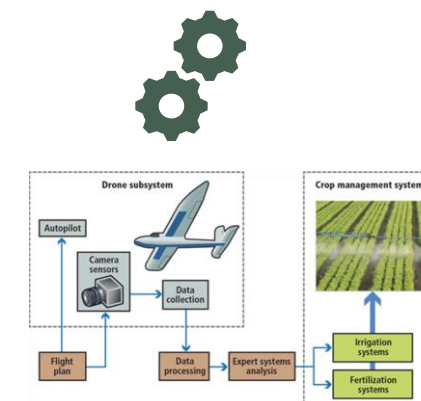
Software combines advanced spectral image processing and proven geospatial analysis technology with a modern, user-friendly interface. For hyperspectral imagery, it has the latest processing and analysis tools to help you extract meaningful information to make better decisions with built-in configurable atmospheric correction tool

A Helping hand for Farming community

- ✓ Plant species identification
- ✓ Vegetation health including photosynthesis efficiency
- ✓ Forestry research including canopy studies
- ✓ Determines moisture content, crop health and yield and N/P/K measurement
- ✓ Mineral identification and mapping
- ✓ Ultra-rapid ballistic parachute for ultimate safety



Technology consulting provides a total end to end solution



The system can be completely automated while retaining flexibility using configurable parameters. Several critical areas of concern are addressed, e.g. Soil analysis including topsoil fertility and erosion risks. Soil degradation, mapping and monitoring.

The land map will be created and Drone will automatically create a flight path suitable to sweep the land. During flight, essential operational and health parameters of the devices such as battery level and wind speeds are also continuously monitored and alerts if any will trigger alarm and actions.

Helps to implement Prescriptive farming. Delivers data-driven planting advice that can determine variable planting rates to accommodate varying conditions across a single field, in order to maximize yield. It has been described as "Big Data" on the farm.