

FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

Presented by the FIG Working Week 2019,
April 22-26, 2019 in Hanoi, Vietnam

"Geospatial Information for a Smarter Life
and Environmental Resilience"



ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22–26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



Conceptual Model and Analysis of Full Natural-Resource Features Based on Geo-Space

Shen Ying, Renzhong Guo, Lin Li, Chengpeng Li

shy@whu.edu.cn



武汉大学

WUHAN UNIVERSITY

ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22–26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



Spatial thinking for all natural resources

- Ideal framework to real practice
- Top-down manner to implement

ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



New vision:

The law and organization support the uniform registration and management of all natural resources.

Property Law : Unified Real Estate Registration
New Ministry

Transformation:

From the geographic entities to legal properties
From physical geospace to legal geospace

ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



National Unified Real Estate Registration

Collective Land



Buildings and Constructions



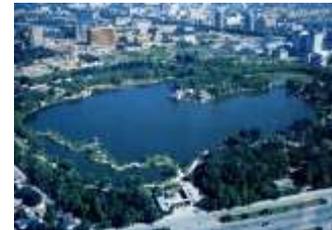
Farmland, Forest Land and Grassland



Construction Land



Homestead Land in rural



Water Area and Sea Area

ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22–26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



National Unified Real Estate Registration

The **rights** involved in real-estate registration include the following types:

- **Ownership** of collective land;
- **Ownership** of buildings and constructions;
- **Ownership** of forests and woods;
- **Use right** of construction land;
- **Use right** of homestead land;
- **Use right** of water/sea;
- **Rights** to the contracted management of farmland, forest land and grassland;
- **Easement**;
- **Mortgage rights**;
- **Other rights** that require registration according to relevant laws.

ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



National Unified Real Estate Registration

The aims of uniform real-estate registration model is to **confirm the spatial positions / occupations** of properties and **describe the ownership, use right** and other rights or obligations.

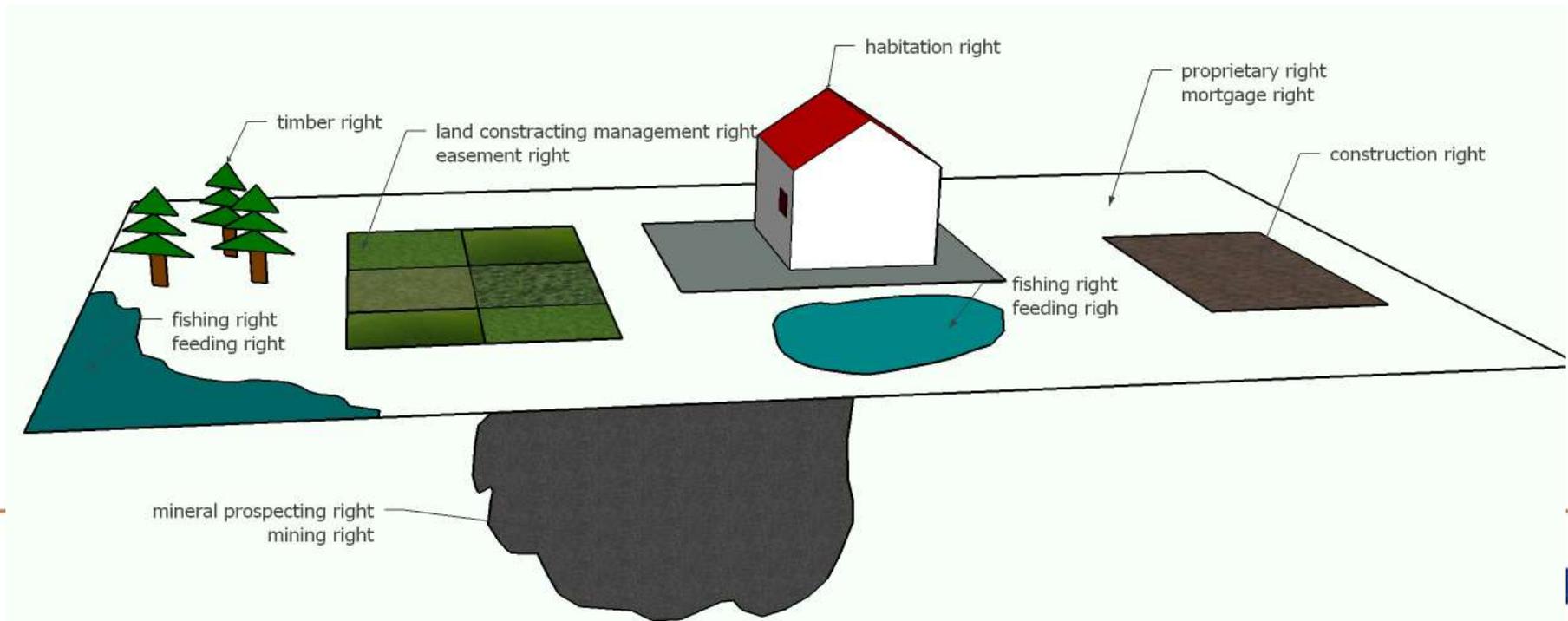




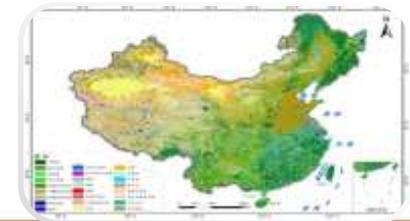
FIG WORKING WEEK 2019

22–26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



- **Ministry of Natural Resources, PRC** : was established with the historical mission to
 - to **integrate the definitive rights and registration management** for various properties;
 - to **unify registration institutions, authorities, information platforms**
 - to **further accelerate the speed of uniform investigation, supervision and registration management.**



ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22–26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



- **"NR Life Community " :**

Actually natural resources are as a community of life, which are following the diversity, integrity and internal laws of the ecosystem.

- **Space of national Land :**

As the carrier of natural resources, the 3D Geo-space where human beings and natural resources coexist is in urgent need of completing the overall or integration planning.

ORGANISED BY



PLATINUM SPONSORS





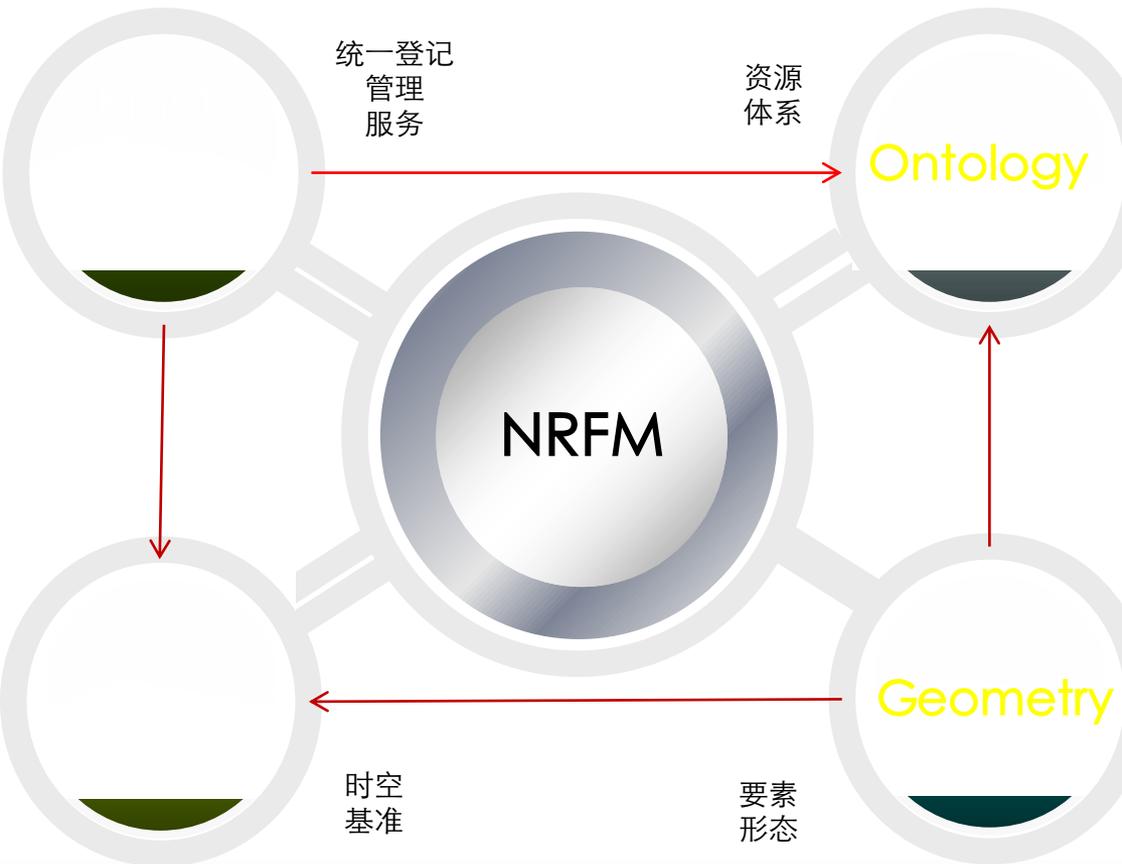
FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



Conceptual Model for Full Natural Resource Feature



- **Ontology:** the concepts and semantics of each feature, multi-feature and cluster of natural resources in domain ontology.
- **Geospace:** scale and resolution, time, location, spatial form and structure.
- **Geometry:** 3D geometric form, association, variation.
- **Rights and services:** rights and service descriptions related to natural resources

ORGANISED BY



PLATINUM SPONSORS





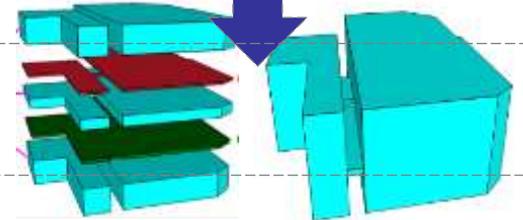
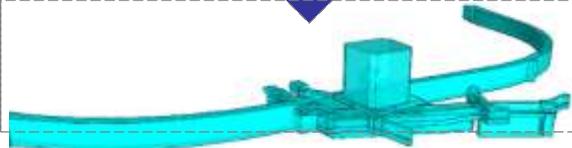
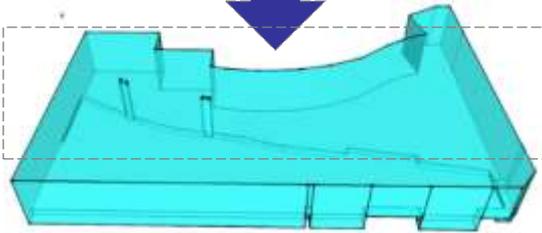
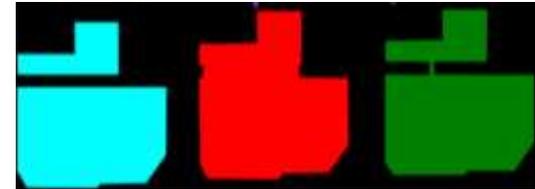
FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



From 2D to 3D



Precise descriptions
of 3D space

Vertical 3D layers

Indivisible 3D space

Unified resolution: Respect the original essence of 3D space with true 3D descriptions.

ORGANISED BY



PLATINUM SPONSORS





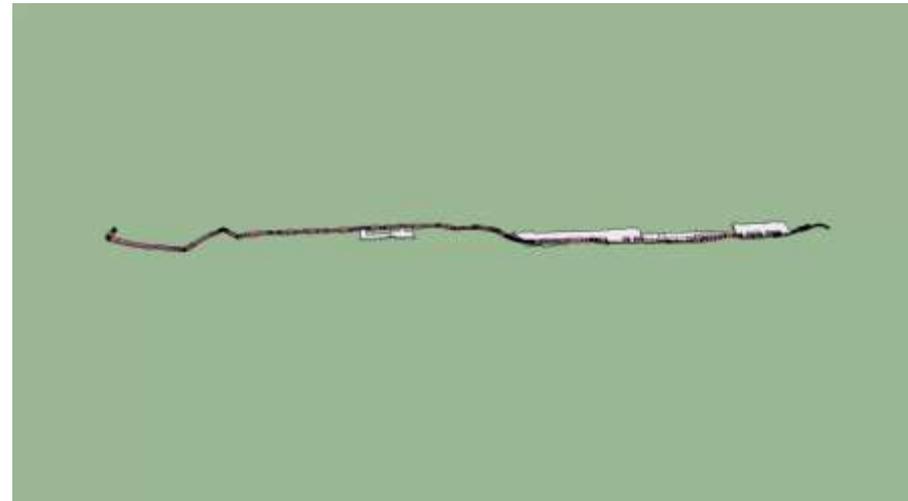
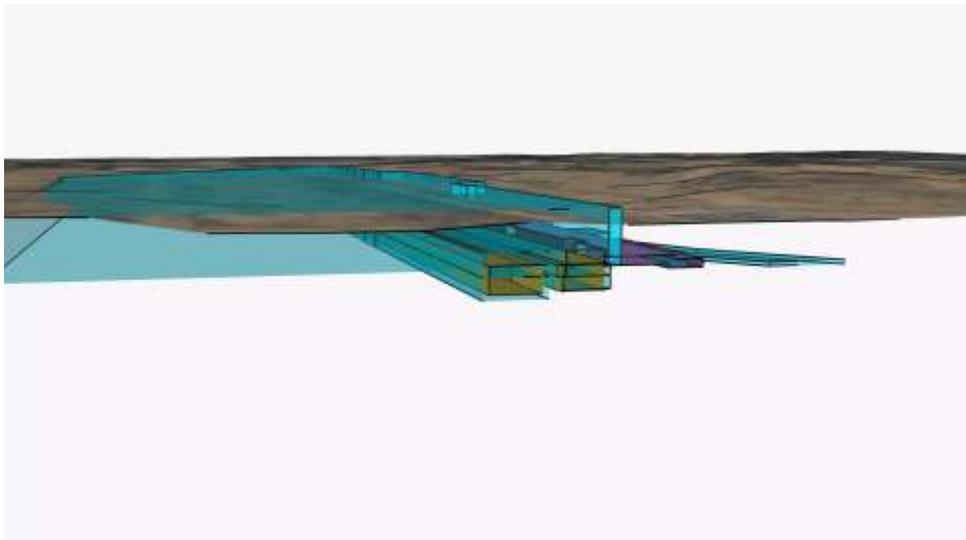
FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



From above to below the earth surface



ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



From single feature to all features



land



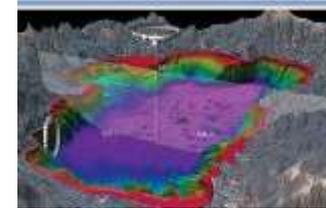
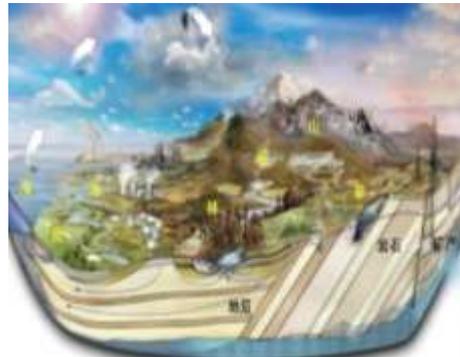
water



Grass, forest



Land and construction



geology

ORGANISED BY



PLATINUM SPONSORS





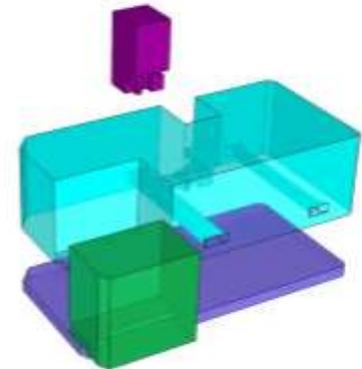
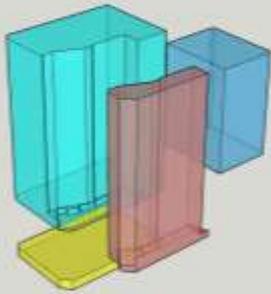
FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



Full 3D thinking from planning to designing, constructing, surveying, managing



ORGANISED BY



PLATINUM SPONSORS





FIG WORKING WEEK 2019

22-26 April, Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"



Shen Ying

shy@whu.edu.cn



武汉大学
WUHAN UNIVERSITY

ORGANISED BY



PLATINUM SPONSORS

