Applicability of electronic mapping for Environmental Design Researchers

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[Archi_TEXTURE TRACE timE]

[Theoretical Background]

The **core concept** of ecological analysis in Environment Behavior Research is the Behavior Setting.

Definition: *"An environment-behavior unit characterized by cyclical patterns of activity that occur within specific time intervals and spatial boundaries."*

Fundamental Methods

- **Longitudinal approach**
- **Naturalistic observation**
- **Field studies**
- **Direct recording of behavior**
- **Unobtrusive methods**

[Point of Emphasis]

- **[Circulation Behavior Mapping]**

[What to Achieve]

- **[Unobtrusive Survey Tool]**
- **[Reduce Margin of Error in Data]**
- **[Automated Precision Time Data]**
- **[Elongate Uniform Observation]**

[Types of Data to Retrieve]

[01] : [**The length of traveled distance**]
[02] : [**Trip counts between different locations**]
[03] : [**Precision Time-sampling**]
[04] : [**Accurate Circulation Mapping**]
[05] : [**Trip counts between different nodes**]
[06] : [**Time spent on the move**]
[07] : [**Traffic Index**]
[08] : [**Comparative Workload Analysis**]

&

[09] : [**Unaffected Behavior Pattern Data**]

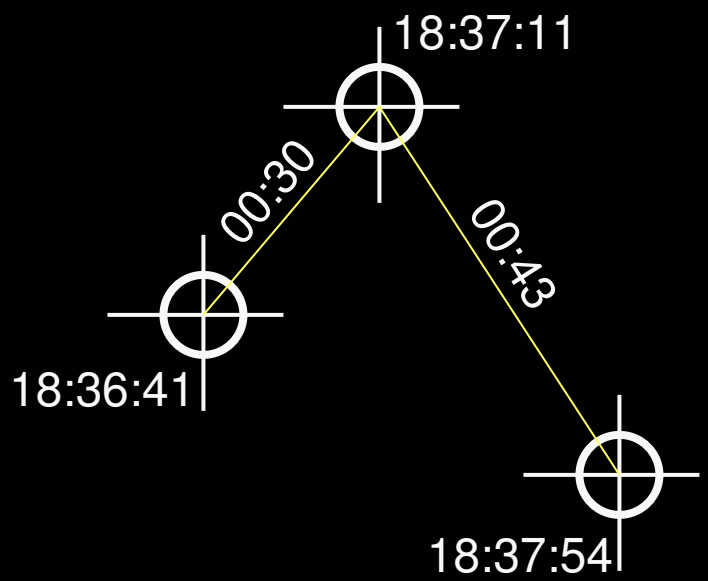
[Circulation Behavior Mapping]

Three Dimensions

[01] : [Position]

[02] : [Path]

[03] : [Time]



[Tools To Be Used]

[Hardware]

[01] : [RFID]
[02] : [Laser Scanning]
[03] : [Video Image Recognition]

[Software]

[01] : [MATLAB as Language]
[02] : [CAD]
[03] : [AVI & MPEG movie files]

[Experiment Methodology]

[Steps]

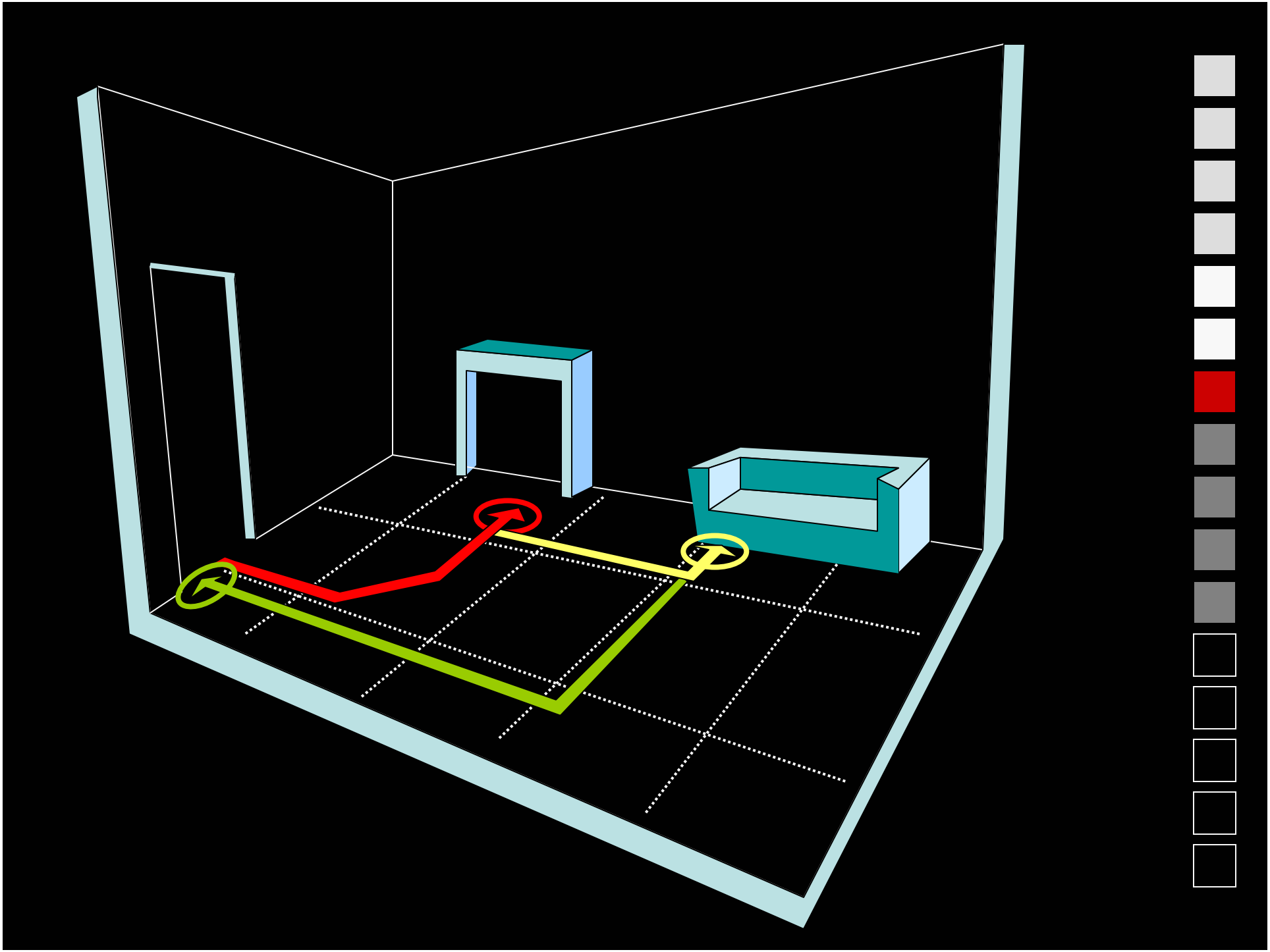
[01] : [Create Modeled Space with known DIMENSIONS]

[02] : [Make a Mock-up Test Case with Control Samples]

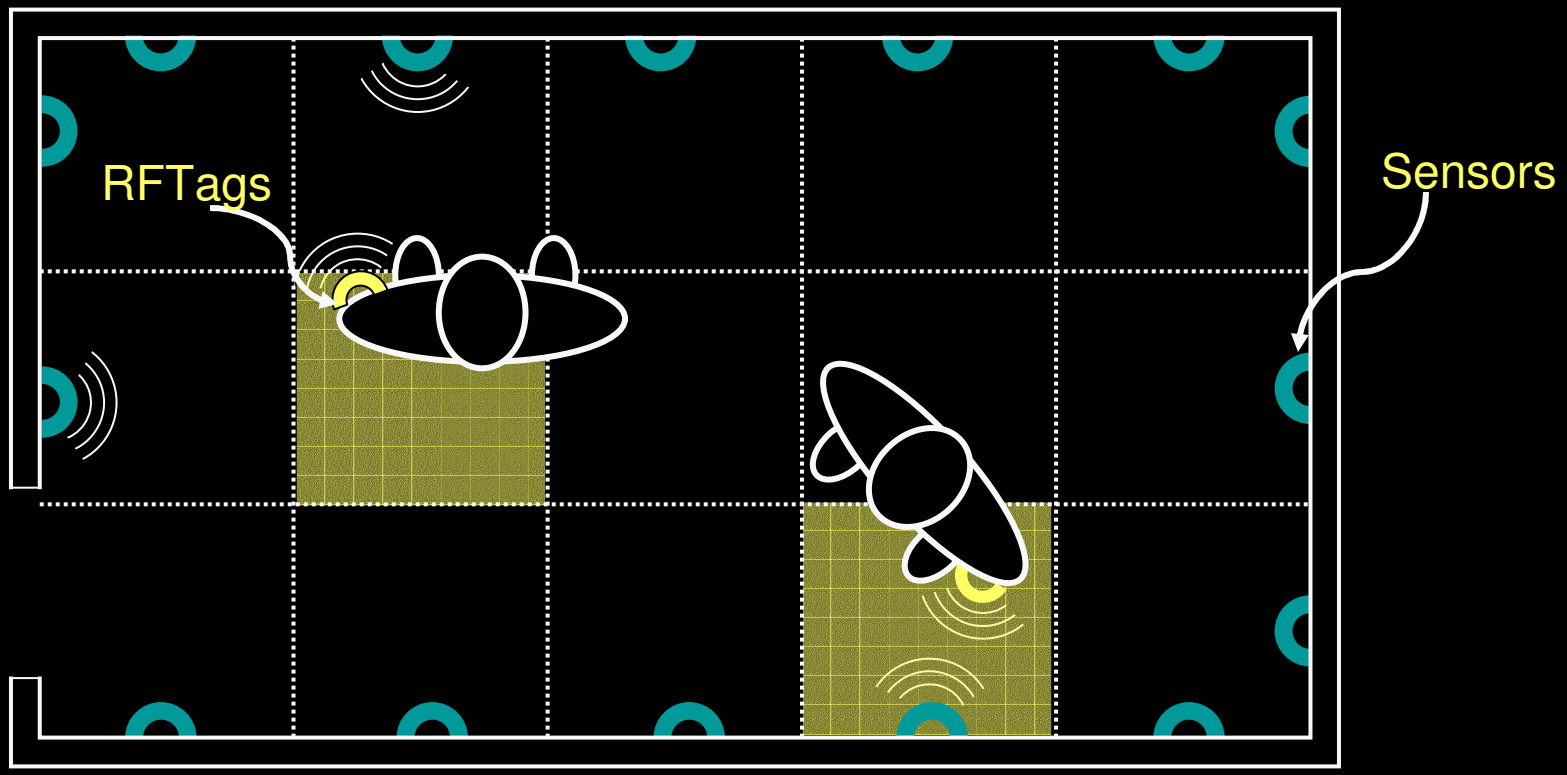
[03] : [Setup Video Capture, RFID Maze, & Laser Scanners in the Controlled Experimental Environment]

[04] : [Collect Manual & Electronic Data Simultaneously]

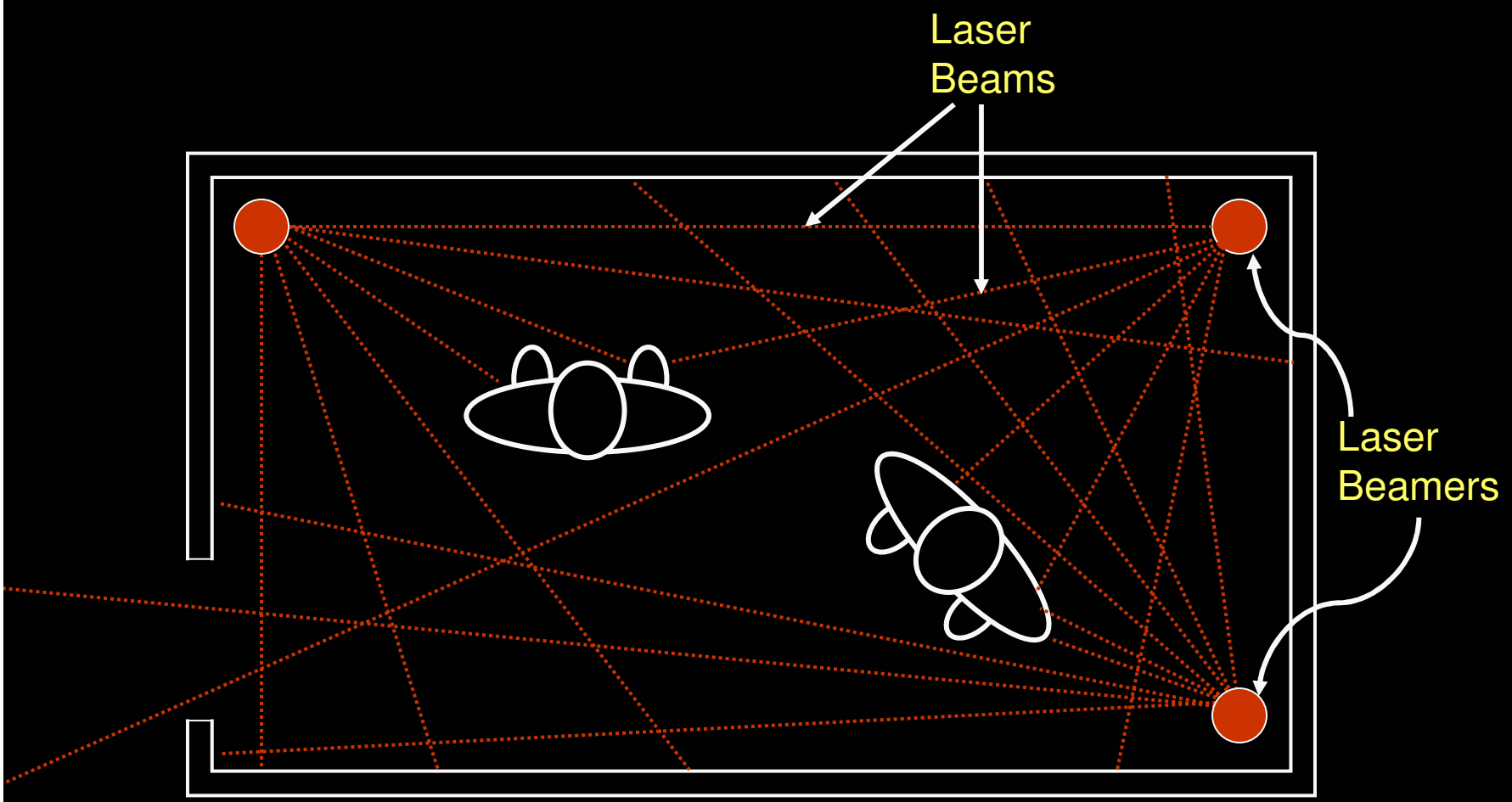
[05] : [Synthesize & Compare]



[RFID Conceptual Diagram]



[Laser Scanning Conceptual Diagram]



[Sources of Resources/Support]

Center for Spatial Information Systems

University of Tokyo

Specializes in Movement Tracking by Laser Scanners and RFID Technology

Ref.: Shibazaki Lab

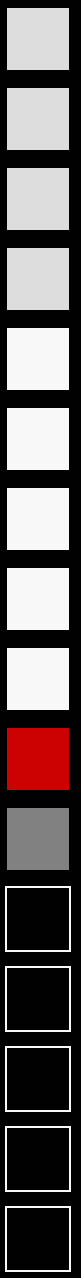
&

Innovative IP Architecture Center

NTT Communications

Specializes in Optical Flow Analysis and Face Recognition through Video Images

Ref.: Hidetomo Sakaino, Senior Manager

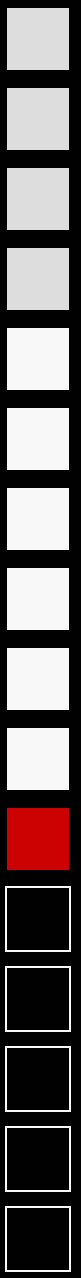


[Output of Experiment]

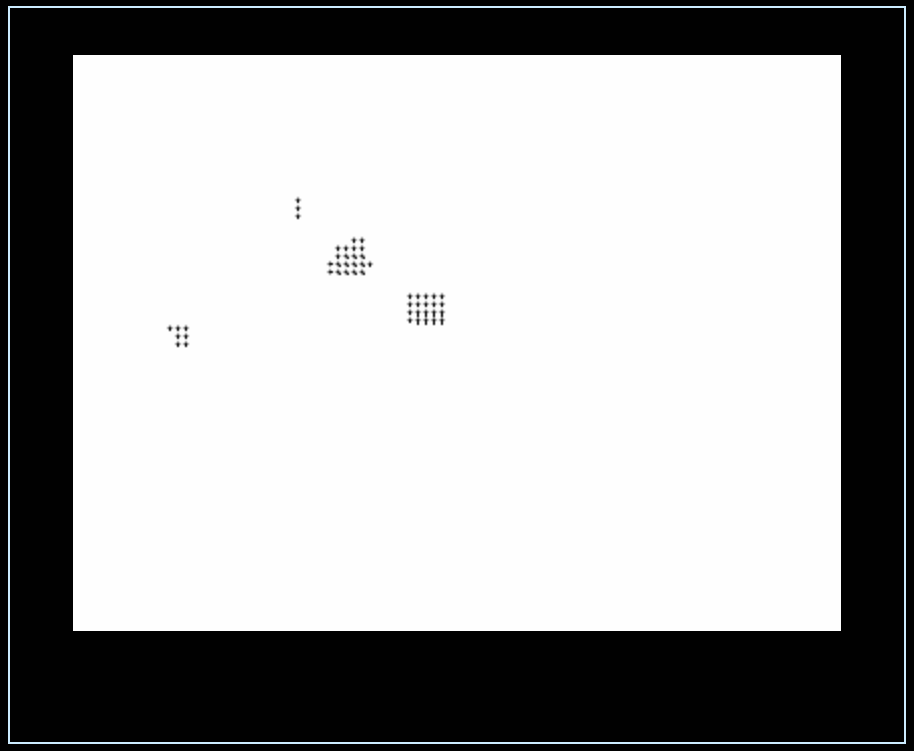
Three Types of Maps will evolve:

[01] : Laser Scanning Map (RFID)
[02] : Video Image Analysis Map
[03] : In-Situ Manual Tracing Map

- The Pre-Experiment Mock Up Drawing Data will act as the Point of Reference for Comparison.



Source: Hidetomo Sakaino



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[**Thank You**]