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FM Exhibition Tool Pack (notes)

Thanks for using this tool pack! Below is a simple description for core scripts.
Email support: thelghome@gmail.com
Website: http://frozenmist.com

FM Network UDP

Please Check: FMNetwork_ReadMe.pdf

FM WebSocket

Please Check: FMWebSocket_ReadMe.pdf

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Game View Encoder

Render Cam (GameObject)
-Capturing game view of this camera

Send Texture (Texture2D)
-Captured Texture

Resolution(Vector2)
-Target Resolution

Quality (int)
-Image quality for streaming, 100 is the best quality, default is 40

Match Screen Aspect (bool)
-Adjust Target Resolution based on screen ratio
Interval (float)
-Interval of streaming

On Data Byte Ready Event (Event(Byte[]))
-Invoke event with byte[], should pass to “Send command” in networking

Label (int)
-Encoder and Decoder should be same label id

Game View Decoder

Received Texture (Texture2D)
-Received Texture

Test Quad (Game Object)
-Quad for debug test

Test Img (Raw Image)
-Raw Image for debug test

On Received Texture2D (Texture2D)
-Invoke event with Texture2D data

Label (int)
-Encoder and Decoder should be same label id

Audio Encoder

Stream Game Sound (bool)
-allow to capture in-game audio

Output Sample Rate (int)
-Audio Sample Rate (read only)

Output Channels (int)
-Audio Channels (read only)

Interval (float)
-Interval of streaming

On Data Byte Ready Event (Event(Byte[]))
-Invoke event with byte[], should pass to “Send command” in networking

Label (int)
-Encoder and Decoder should be same label id

Audio Decoder

Label (int)
-Encoder and Decoder should be same label id

Audio Info: Source Channels (int)
-Source Channels

Audio Info: Source Sample Rate (int)
-Source Sample Rate

Audio Info: Device Sample Rate (int)
-Device Sample Rate

Energy Saving Manager

D Mode (Detect Mode)
-GYRO: using gyroscope sensor to detect
-ANY: using any keyboard/mouse input to detect

Is Sleeping (bool)
-true: in energy saving mode, shows cover panel (sleep mode panel)
-false: not in energy saving mode

Sleep Threshold (float)
-(Threshold) enter sleep mode
-unit: second

Awake Threshold (float)
-(Threshold) exit sleep mode
-unit: second

Force Awake (bool)
-true: force it awake, ignore energy saving mode (useful for debug in editor mode)
-false: default

Ignore Force Awake On Build (bool)
-true: no effect on editor mode, but will ignore “Force Awake” after built (suggested)
-false: no effect if “Force Awake” is false

Force Sleep Mode On (bool)
-true: will override “Force Awake” and stay in Energy Saving Mode
-false: default

Disable Grp (GameObject[])
-Game Objects which will be disabled in Energy Saving Mode

On Sleep Mode Enter (event)
-invoke event when enter sleep mode (energy saving mode)

On Sleep Mode Exit (event)
-invoke event when exit sleep mode (energy saving mode)

Debug Clock (Vector3)
-for debug information only, 24hr
- x (hour) y (min) z (sec)

Auto Reload Scene (bool)
-true: current scene can be reloaded on specific time “**Schedule_Reload”**

Schedule_Reload (Vector3[])
-set an array of alarms that will trigger reload scene in 24hr
-need to enable "**Auto Reload Scene**"
- x (hour) y (min) z (sec)

Auto Quit App (bool)
-true: current scene can be reloaded on specific time "**Schedule_Quit"**

Schedule_Quit (Vector3[])
-set an array of alarms that will trigger reload scene in 24hr
-need to enable "**Auto Quit App**"
- x (hour) y (min) z (sec)

Force Reload App Gesture (bool)
-true: touch screen with 5 fingers will reload current scene
(Debug shortcut: Keyboard R + Mouse Left)

Force Reload App Threshold (float)
-(Threshold) Reload current scene
-unit: second

Force Quit App Gesture (bool
-true: touch screen with 5 fingers will quit the app
(Debug shortcut: Keyboard R + Mouse Left)

Force Quit App Threshold (float)
-(Threshold) Quit the app
-unit: second

Network Action Server(Old Method)

IP (string)
-streaming server IP

Server Listen Port (int)
-server listen port

Get Streaming Server Port_Event (event: int)
-invoke an event with port value
-suggest to pass streaming port to "**NetworkDiscovery"** for broadcasting

Is Connected (bool)
-status of connection

Interval (float)
-interval between each sent
-unit: second

Connection Count (int)
-total amount of connected clients

Network Action Client(Old Method)

IP (string)
- server IP

Server Listen Port (int)
- server listen port

Is Connected (bool)
-status of connection

Auto Reconnect (bool)
-true: will try to reconnect when lost connection

On Connected Event (event)
-invoke an event when connected to server

On Disconnected Event (event)
-invoke an event when disconnected to server

On Received Data Event (event: string)
-invoke an event with received data

Network Discovery

NT (NetworkType)
-set it as Server or Client

Server IP (string)
-Server IP

Client IP (string)
-Client IP

Frequency (int)
-broadcast frequency in MS

Streaming Port (int)
-streaming Server port, for broadcasting message

Is Streaming (bool)
-should only set by **Streaming Client**
-true: will stop listening from network discovery server

Is Listening (bool)
-should only set by **Streaming Client**
-true: will stop listening from network discovery server

Get Streaming Server Port_Event (event:Int)
-invoke when found server
-should assign streaming server port to **Streaming Client**

Get Streaming Server IP_Event (event:String)
-invoke when found server
-should assign streaming server IP to **Streaming Client**

Get Client IP_Event (event:String)
-invoke when found client

Stop After Found IP (bool)
-stop network discovery after received Server info

Show Log (bool)
-show debug log

World To Screen Space

Reference (Transform)
-transform of 3D game object

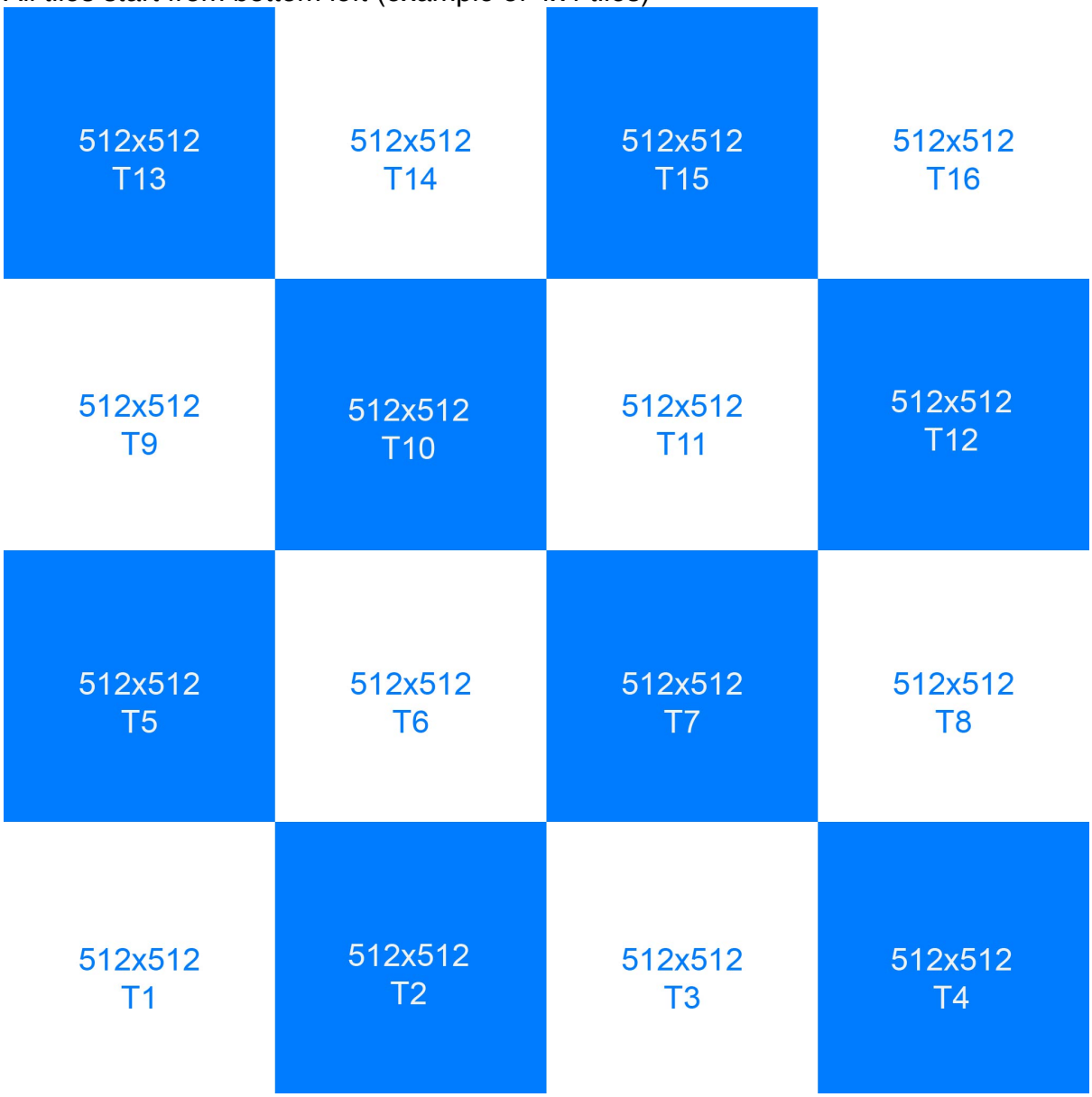
Target Rect (Rect Transform[])
-your UI Rect Transform for tracking

On Screen Event (event)
-invoke when your reference 3D world position on screen

Off Screen Event (event)
-invoke when your reference 3D world position off screen

multiTiles4x4
multiTiles4x1
multiTiles2x2

All tiles start from bottom left (example of 4x4 tiles)



General Questions:

Webcam Demo Crash on iOS
Solution: please add Camera Usage Description in Player Setting.

#Streaming Server/Client can't connect automatically
Solution:
1. all devices should be in same local network.
2. Try connecting to server manually. "Network Discovery" feature may be affected by router traffic/settings.
3. Please DO NOT running multiple streaming demo on same device, it may occupy the streaming ports.

#Streaming: poor performance
Solution: please make sure your device supports multi-threading, and reduce your streaming texture resolution and streaming FPS if necessary.

#Network Action Server didn't work(Old Method, recommend use UDP solution)
The demo Server scene requires minimum 4 threads on your device, it acts as both Server and Client.
-NAServer: 2 threads
-NAClient: 1 threads
-Network Discovery(Server) 1 thread
-Network Discovery(Client) 1 thread
The minimum functional server only needs NAServer, which requires 2 threads for communication.

Known Issues:
#When using Google Pixel2, Pixel3 as Server side, Network Discovery is not working
-you have to manually grant multi-broadcast permission in order to receive UDP broadcast from clients, will try to solve it in future.