[initialT’s Product Introduction]

**AirPTT** instant & seamless Soft Push-To-Talk

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1. Overview

**AirPTT** Hold and Talk! instant & seamless Soft Push-To-Talk (PTT)

‘AirPTT’, which is software based PTT (Push-To-Talk), provides voice and text based instant communication (1:N) service based on wireless internet environments such as Wi-Fi, 3G, LTE, etc. and various types of N-Screen terminals including Smartphone, Tablet PC, Desktop PC, etc.

Given that it is possible to interface with RoIP (Radio over IP) gateway equipments through SIP protocol support, AirPTT can provide the PTT service unified with existing analog walkie-talkie (UHF, VHF, TRS).

- **SIP/RoIP**
- **1:N Push-To-Talk**
- **1:N Text Talk**
- **Wi-Fi/3G/LTE N-screen**
- **‘Hands Free’ Bluetooth**

*Interface with RoIP gateway equipments*
2. Key Features and Characteristics

- **1:N PTT (Push-To-Talk) & Text Message (chat)**

  PTT (Push-To-Talk) Service that up to thousands of members can interconnect with each other at the same time

  - Sending Push-To-Talk in a stable manner by using the minimum bandwidth even in 3G (Voice 8kbps)
    - In case of applying VAD, PTT Lock : Avg. 4kbps / idle : Avg. 11bps
  - Supporting occupations 3,000 clients at the same time (Per AirPTT server)
  - Supporting communication security through OTP certification and TLS/SSLv2
  - Supporting DTMF (Dual Tone Multi Frequency)
  - Supporting SIP protocol, Supporting interface with RoIP gateway equipments

  ![Diagram of AirPTT](image-url)
2. Key Features and Characteristics

- **PTT Service Compatible with Existing Analog Walkie-Talkie (Supporting Interface with SIP and RoIP)**

AirPTT can provide PTT service environment unified with existing analog walkie-talkie such as UHF, VHF, TRS, etc. given that it can be able to interface with RoIP (Radio over IP) by supporting not only IP, but SIP protocol.

- **Supported Equipments**
  - RoIP gateway equipment: Unicoi, Raven RoIP Gateway (M4x), etc.
  - Walkie-talkie: Icom IC-T70E (VHF/UHF supported), etc.

- **AirPTT – Supporting interface with RoIP gateway equipment**
  - Supported Equipments: Unicoi, Raven RoIP Gateway (M4x), etc.
  - Supported walkie-talkie: Icom IC-T70E (VHF/UHF supported), etc.
2. Key Features and Characteristics

- **AirPTT – Bluetooth Interoperation Function (Hands Free-PTT)**

  AirPTT provides PTT service suitable for user environments including logistics, transportation, leisure, etc. by offering Hands Free function that can interface with Bluetooth device without touching Smartphone

  - Providing “Hands Free-PTT” service suitable for user environment such as driving, movement, etc.
  - Possible to interface with various types of Bluetooth according to user’s preference and use environments
    - Headset (Remote PTT Button), Bluetooth Speaker Mic. (Built-in PTT Button), etc.

  ![Diagram](image_url)

  - **Bluetooth Device Type – Remote PTT Button+Headset**
    - Remote PTT Button
    - Bluetooth Headset
    - Microphone
    - Speaker
    - Volume
    - AirPTT (Android Phone)

  - **Bluetooth Device Type – Built-in PTT button**
    - Bluetooth Speaker Mic.
    - PTT button (Built-In)
    - Microphone
    - Speaker
    - Volume
    - AirPTT (Android Phone)
2. Key Features and Characteristics

- **PTT Service Server Automatic Detection Function**
  - Possible to automatically detect and set PTT service server by company that a user is belonged to

- **Convenient PTT Channel Management Function**
  - Providing secret and security channels (PTT packet encoded)
  - Providing management functions including specific channel list, go directly to a certain channel, favorite channel, etc.

- **PTT History Function**
  - Providing all PTT history (PTT recording) of channels that a user has access to
  - Possible to record by PTT and to replay voice

- **Providing PTT User List**
  - Providing the information of user that has access to same PTT channels

- **Providing Location Information of The Other Party (PTT locked by other)**
  - Providing the other party’s location information by interfacing with Google Map

- **Providing Various Convenient Functions**
  - Displaying the number of concurrent users on the connected channel
  - Providing UI/UX regarding PTT lock status (lock, unlock, requesting lock. Disable)
  - Providing TOT(Time Out Timer, PTT Transmission Time Limit) function
  - Providing volume control function
3. Description of Specific Features

(1) Android Application UI ①

1. [Setting] Move to a screen
2. Set a user’s name
3. (1) Set PTT Server connection status (Disconnect, Reconnect)
   (2) Display PTT server name
   (3) Set Favorite channel
4. Display channel information
5. (1) Left and right movement button of PTT channel
   (2) Search PTT server
   (3) Go directly to PTT channel (Enter PTT channel number)
   (4) PTT Channel list
6. PTT Lock (Hold Lock button and Talk) function
   - Display UI/UX by lock status
7. Display the other party’s location information (Interface with Google Map)
8. Select speaker/earphone and Control volumes
9. Set Bluetooth
10. PTT list (PTT history function provided)
11. Badge – PTT, Chat
12. Move to Chat screen

[AirPTT – Main Screen]
3. Description of Specific Features

(1) Android Application UI ②

[AirPTT – Main Screen]

- **Display Channel Information**
  
  1. Display channel name
  2. Display icon of channel status
     - (1) Whether or not to record PTT
     - (2) Whether or not to be secret channel
     - (3) Whether or not to be security channel (PTT packet encoded)
  3. Display channel number
  4. Display the number of concurrent users who have access to a same channel
  5. Display TOT (Time Out Timer, PTT Transmission Time Limit)
3. Description of Specific Features

(1) Android Application UI

- PTT Service Server Search
- PTT Channel List
- Favorite PTT Channel
- Text Message (Chat)
3. Description of Specific Features

(1) Android Application UI

- The Other Party’s Location Info.
- PTT User List
- Setting

Air PTT (Push-To-Talk) for instant & seamless communication
4. System Configuration

**AirPTT System Configuration**

- **PTT Channel Management Server**
  - AirPTT Server Automatic Detection Function
  (Automatically detect AirPTT server by company that a user is belonged to)
  - User Verification
  - PTT Channel Mgmt.
  (Ch. name, URL, secret ch. Mgmt., etc.)

- **AirPTT Server**
  - PTT channel creation and certification/ PTT channel broadcasting
  - Supporting up to 3,000 concurrent clients (Per AirPTT server)
  - SIP protocol support
  - Supporting interface with RoIP(Radio over IP) gateway equipment

Air PTT(Push-To-Talk) for instant & seamless communication
4. System Configuration

- **Division of PTT Channel Mgmt. Servers – Specific System according to AirPTT Server Detection Method** (Possible to construct mixed servers according to service coverage)

AirPTT Server Automatic Detection Method
- **Interface with TDiscovery Server**
  - (1) Detect AirPTT server through UDP based multicast, broadcast
  - (2) Connect to server through certain IP of TCP based local network
    * For (1) and (2) case, need to install TDiscovery server in local network
  - Possible to search by entering domain or IP

AirPTT Server Automatic Detection Method
- **Interface with License Server**
  - (1) Detect AirPTT server by interfacing with license server
  - Once license server verifies IP/Location/ID of user, applicable server IP is provided (HTTP)
  - Possible to search by entering server name

In case of using AirPTT in a certain place and area
- Applied to internal network used only for work purpose

In case of using AirPTT via external network that can be connected to Internet
- Freight, Transportation
- b/w HQ-Agency
### 5. Application Areas

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<th>Target Customer</th>
<th>Application Areas</th>
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<td><strong>Logistics</strong></td>
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| Freight         | • Used for arranging 1:N freights and providing communication among drivers through AirPTT  
                  • Possible to connect to existing applications and services that includes order/arrangement function |
| **Transportation** |                   |
| (Taxi, Bus, etc.) | • Used for arranging 1:N passengers and providing communication among drivers through AirPTT  
                               • Solving complaints from customer regarding existing noisy voice call and Saving operating expense of call center  
                               • Possible to connect its services to Smartphone applications with existing service (chauffeur service, etc.) |
| **Service**     |                   |
| (Construction, Manufacturing, Distribution) | • Possible to manage 1:N works and order work related matters through AirPTT  
                                           • Possible to apply to on-site works such as mid & large scale marts, family restaurants, etc. |
| **Personnel**   |                   |
| (Club, etc.)    | • Used for communication with persons and groups through AirPTT  
                  • Used for group conversation in club, leisure social gathering, etc. |
6. Expected Benefits

- **Providing PTT Service Unified with Existing Analog Walkie-Talkie(UHF, VHF, TRS)**
  - Support interface with RoIP gateway equipment through AirPTT – SIP protocol
  - Maintain facilities of radio network and its strong points by interfacing with existing radio network and Possible to spread its coverage into national network such as Wi-Fi/3G/LTE
  - Possible to provide PTT service by overcoming the limit of call distance with existing walkie-talkie and of poor reception areas
  - Possible to provide flexible system that can extend its service coverage into wire/wireless PTT service users only by installing more AirPTT servers

- **Providing Library by Developing S/W PTT Server System and Application Modules**
  - Possible to integrate and apply wire and wireless network including mobile given that it is basically designed based on IP and to conduct instant 1:N Push-To-Talk without dialing
  - Initial building and service maintenance expenses is relatively cheap compared to TRS based PTT
  - Possible to provide Push-To-Talk service by company through separate PTT server building
  - Maximize its usage through convenient interface with existing systems and applications of company and Expect a convergence service
    - Mobile office/Groupware, Logistics freight, Transportation (Taxi, Bus), Service(Construction, Manufacturing, Distribution), official agency, etc.
  - Possible to develop various types of business products such as B2B, B2C, etc.
  - Telecommunications product, etc. caused by package products with Bluetooth devices and the use of data
  - Possible to approach its service to various areas such as education, hospital, club, community, etc.

- **Providing S/W based Push-To-Talk Application (iOS, Android, Windows)**
  - Resolve inconveniences due to the use of multiple terminals (TRS dedicated terminal(walkie-talkie) and personnel mobile phone)
  - Overcome its dependence on TRS dedicated terminal and Save relevant expenses caused by terminal purchase
  - Support various types of N-Screen terminals including Smartphone, Tablet PC, Desktop PC, etc.

- **Providing a Differentiated Service through Packaging with Bluetooth Devices Compared to S/W PTT Service**
  - Provide ‘Hands Free’ Push-To-Talk by using Bluetooth device/Possible to use various types of Bluetooth devices (headset, wristband, etc.)

- **Providing Push-To-Talk by Using National Wireless Network such as Wi-Fi, 3G, LTE, etc.**
  - Overcome the limit of network coverage (Existing walkie-talkie has the limit of using this in places like in-building, underground sections, etc.)
  - Possible to provide a service for corporations which are sensitive to radio waves like semiconductor factory, hospital, etc.
Thank You