



THINKWARE

CONNECTED

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Company highlights

No# of **Intellectual Property** total 900 cases

No# of **Patents** total 500 cases

Turnover \$196M in FY2018

No.1 in KOREA for Dash Cams with 40% market share ► 1M Units Dash Cam Sales / year

No.1 in Korea for Sat Navs with 60% market share

Dash Cam



LBS



Tablet PC



SAT Nav



Own Factory – Made in KOREA

Person: 300

ISO9001, KCC, K Mark

Product

: SAT NAV, DASH CAM, Tablet

Capacity

: 9.3K/D, 186K/M, 2M/Y

Area : 29,760m²



Global Reference

Global Brands

Direct Business with Global Brands

Qualified / Certified / Approved

Continuous growth with
Future Projects



Japan



KOREA



Japan



TOYOTA
Singapore



USA



EU / Japan



USA



DENSO

Japan

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- 1 NB-IoT
- 2 LTE-M
- 3 LTE

Global Activities of Thinkware Connected

KOREA

- ▶ NB-IoT
- ▶ LTE-M



Japan

- ▶ CAT.4



Singapore

- ▶ LTE-M
- ▶ CAT.4



UK & EU

- ▶ CAT.4

North America

- ▶ LTE-M
- ▶ CAT.4

Connected Line Up

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LITE

NB IoT

EXT Module

Locate Vehicle

Parking Impact Notification

- Notification through App
- Still Cut Image
- Location Info

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STANDARD

LTE-M

EXT Module

*Locate Vehicle **with High Res Image***

Parking Impact Notification

- Notification through App
- **GIF, 3 frame**
- Location Info

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Extreme

LTE CAT4

USIM In Cam

*Locate Vehicle **in real time***

Parking Impact Notification

- Notification through App
- Location Info

Drive Impact Notification

***Remote Live Streaming,
SOS***

Geo Fencing

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Narrowband IoT
External Dongle
Low Cost



1 **Parking Impact Notification**

When an impact is detected during parking mode, the dash cam sends an impact notification and a still shot image of the incident to phone app.

2 **Locate Vehicle**

The User can easily check the last parked location(with Address) indicated on the application`s map.

3 **Remote Power Control**

During parking mode, the user can remotely turn off the dash cam by the app.

\$100 for dongle + 2 years subscription
Then \$20 / year for 8MB/month

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LITE

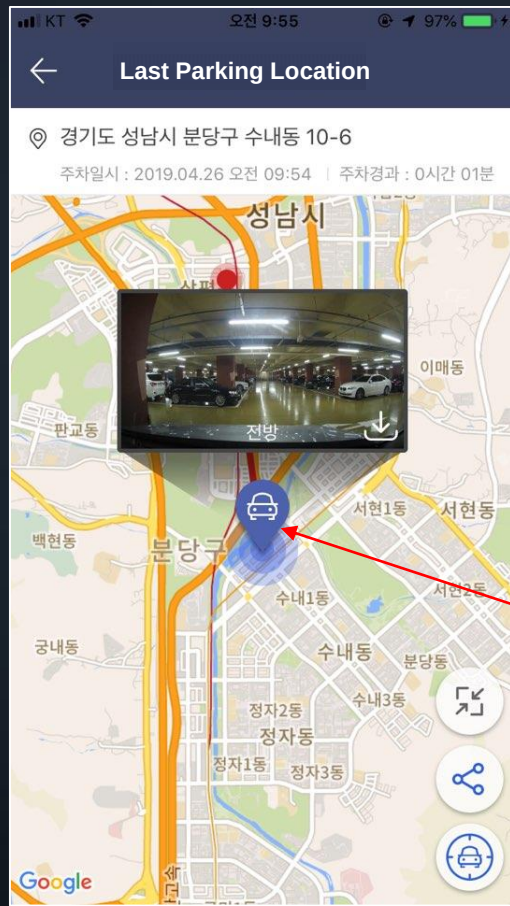
Narrowband IoT
External Dongle
Low Cost



<https://www.youtube.com/watch?v=QwTiDfCQ8hA>

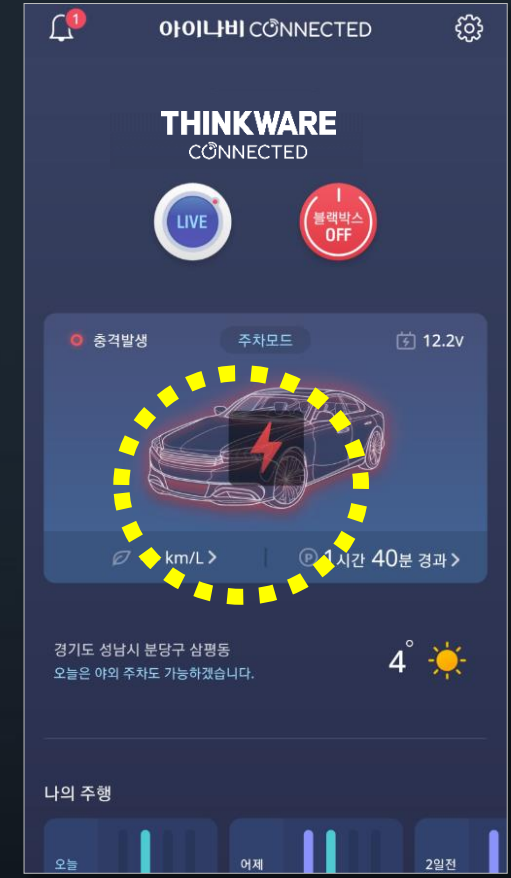
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Display image when vehicle parked with location info on demand



Location on Map

Notification of impact during parking mode



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PRO

LTE-M

External Dongle

More Bandwidth =

More Data



1 **Parking Impact Notification**

When an impact is detected during parking mode, the dash cam sends an impact notification and a **GIF (3Frame for Front/Rear)** of the incident to phone app.

2 **Locate Vehicle**

The User can easily check the last parked location with address and High Res Image)

3 **Remote Power Control**

During parking mode, the user can remotely turn off the dash cam via the app.

\$130 for dongle + 2 years subscription
Then \$25 / year for 50MB/month

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STANDARD

LTE-M

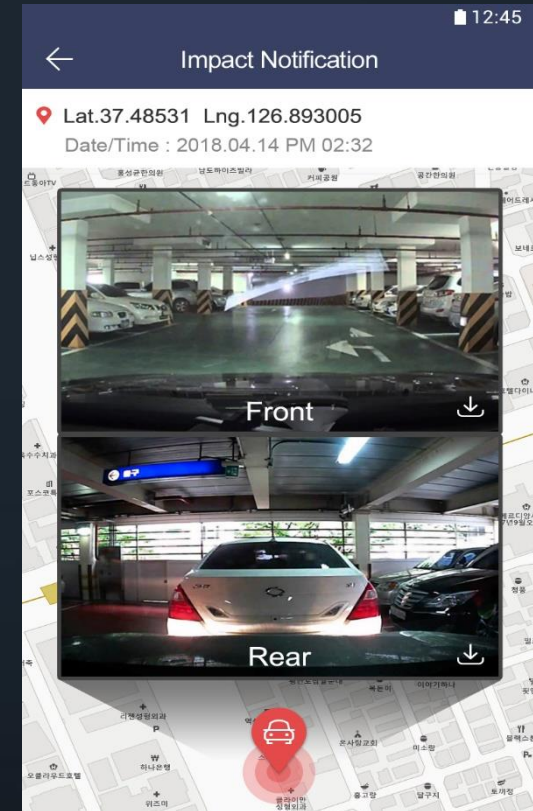
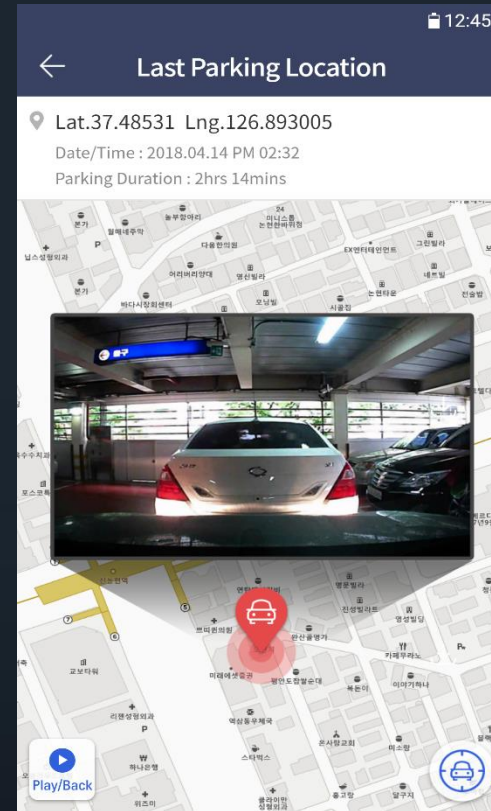
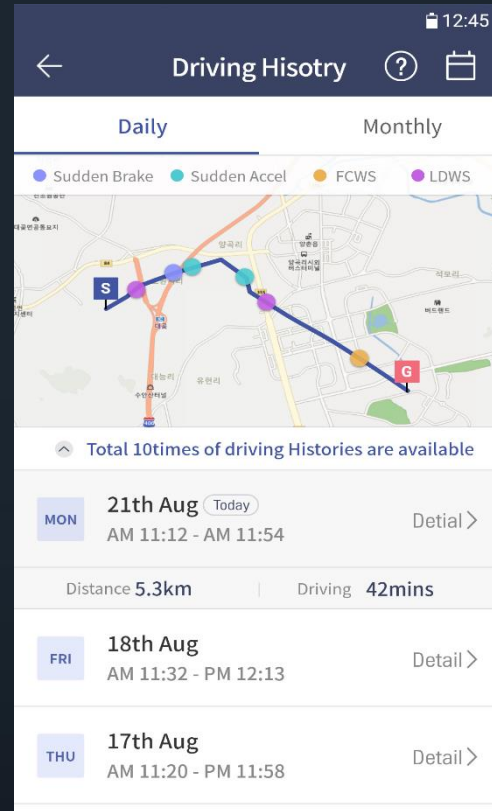
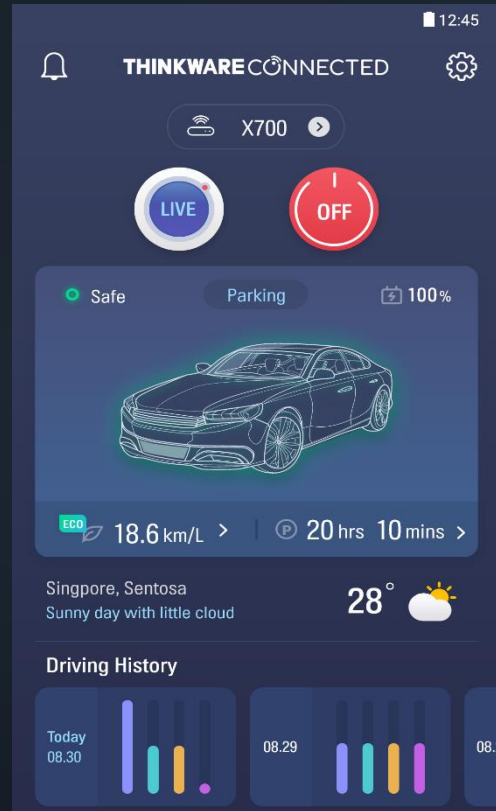
*External Dongle
More Bandwidth
= More Data*



<https://youtu.be/Vvx513ubN2k>

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LTE-M and NB IoT Service enhancements



LTE-M and NB IoT Service enhancements

- Driving mode impact alerts via SMS**
- Driver behaviour tracking**
- Weather information and alerts**
- Traffic information alerts**
- Pollution information**
- Fuel efficiency via OBD port**

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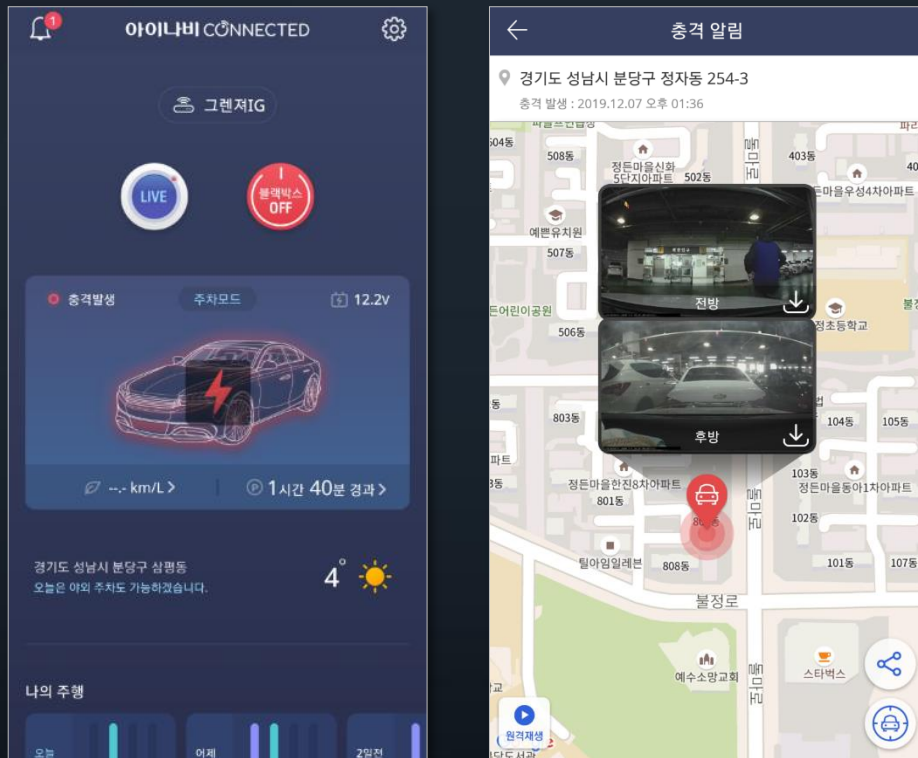
EXTREME

LTE CAT4
USIM Insertable
High End

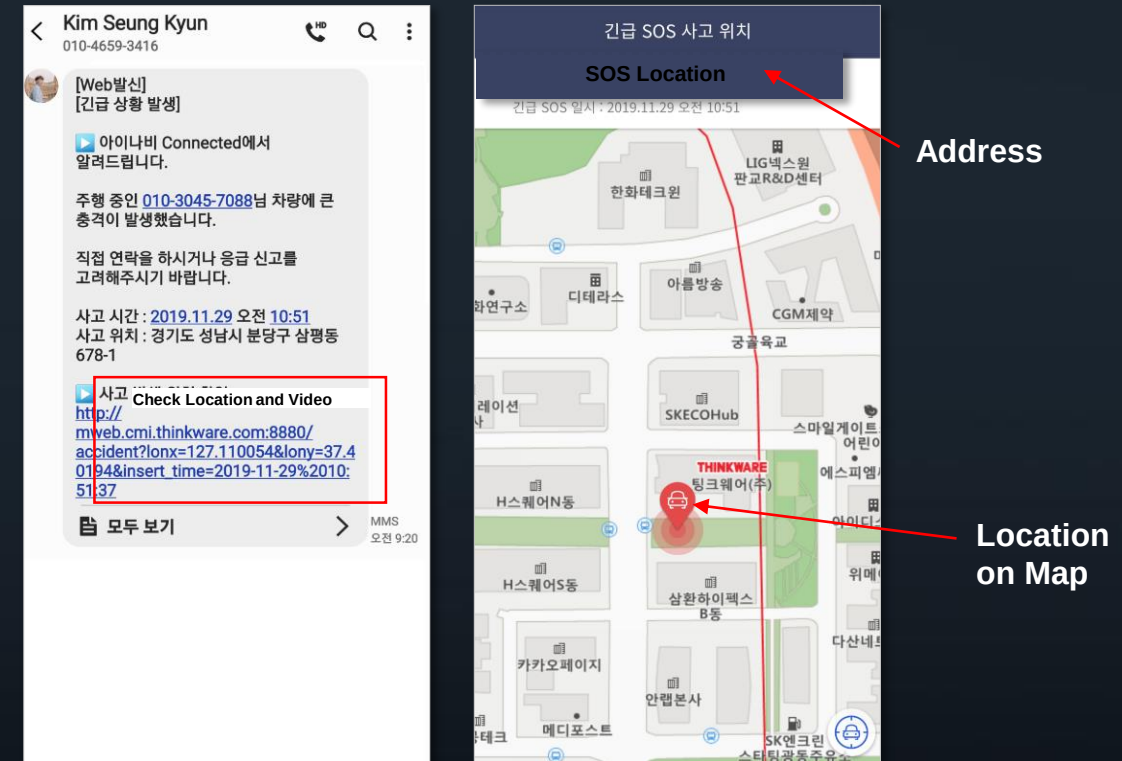


- 1 **Locate Vehicle**
- 2 **Geo-Fencing**
- 3 **Drive Impact Notification**
- 4 **Parking Impact Notification**
- 5 **Remote Live Streaming**
- 6 **S.O.S Button**

Notification of impact during parking mode with video



Notification of big impact during driving mode with video



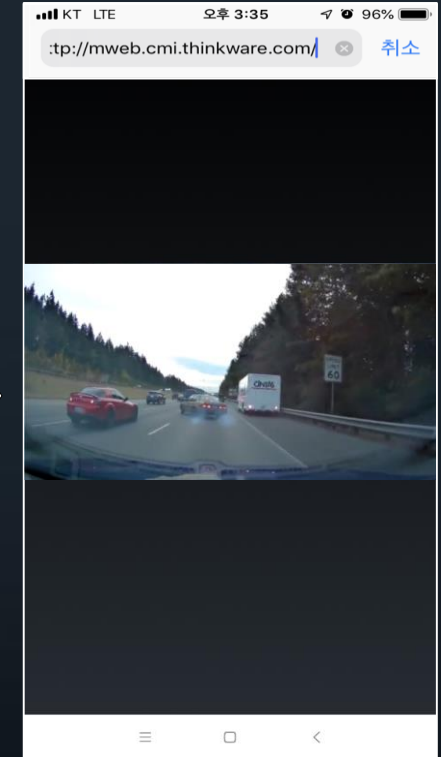
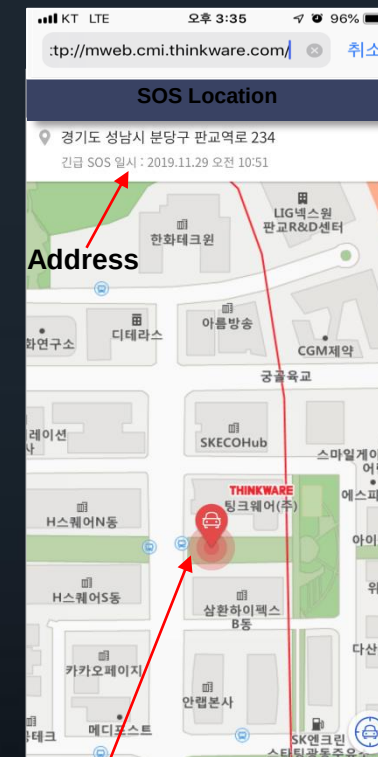
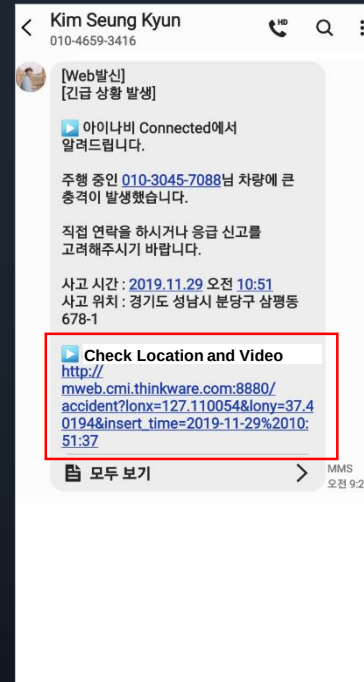
SOS Video Upload

When Driver presses the SOS button in the event of a crash or an emergency, sends notification via SMS with location info on map and uploads recorded video (5sec before & 5sec after) into server via web link on SMS to makes someone to see what happen there.



Before 5sec

After 5sec

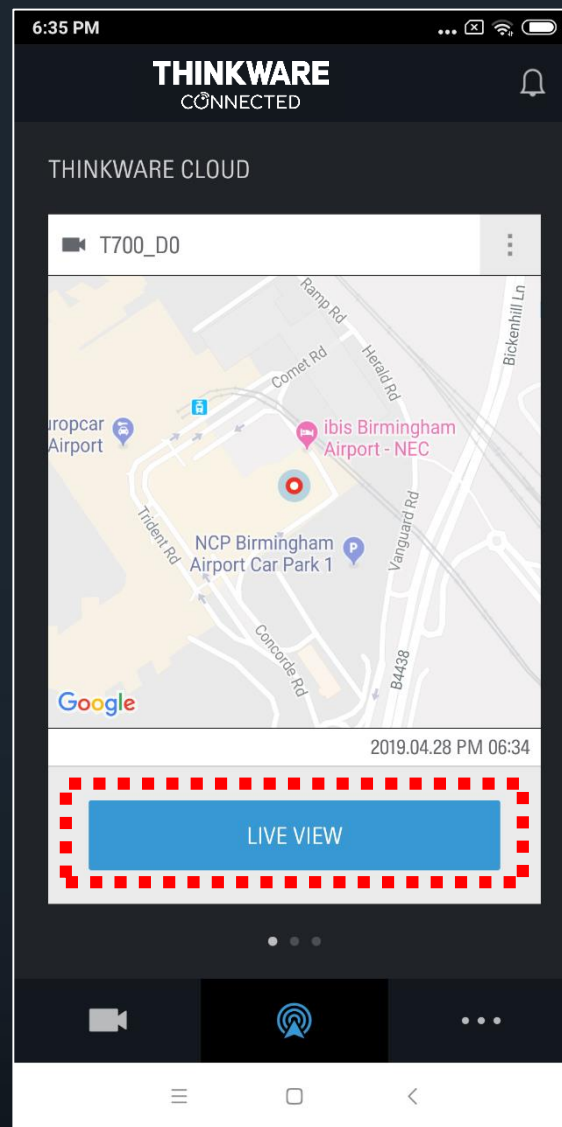


Live Streaming

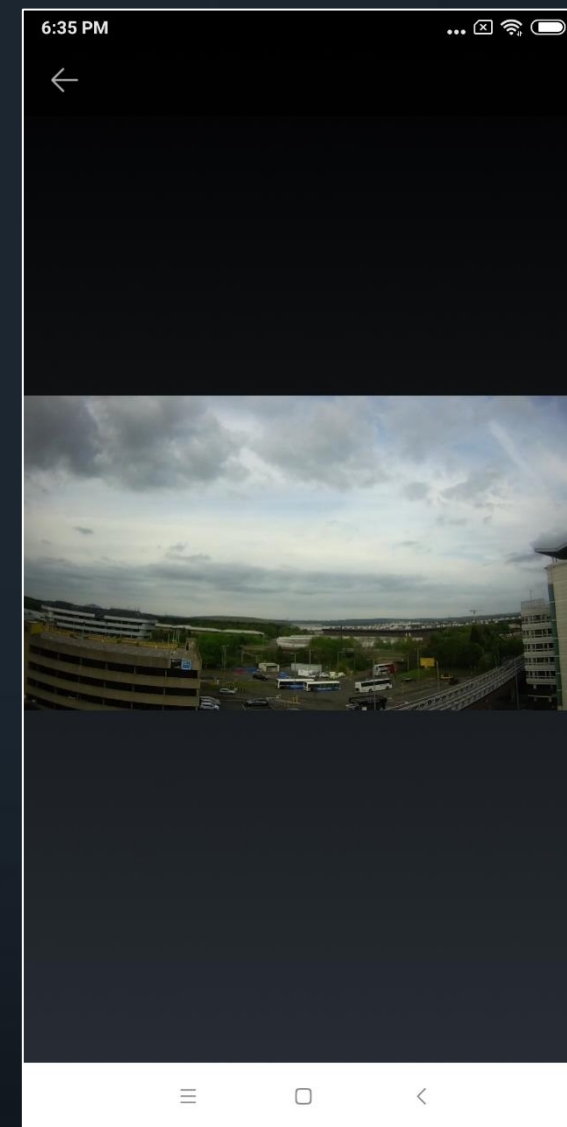
- 1) *Driving Live*
- 2) *Parking Live*

Remote Playback of recorded data

- 1) *Event Recorded Data*
- 2) *Normal Recorded Data*



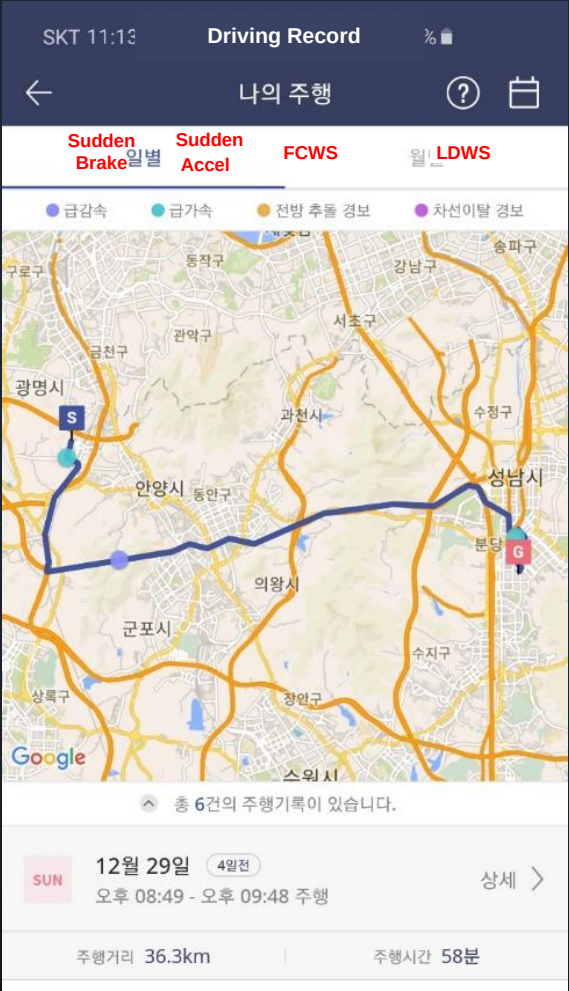
Driving / Parking Live View



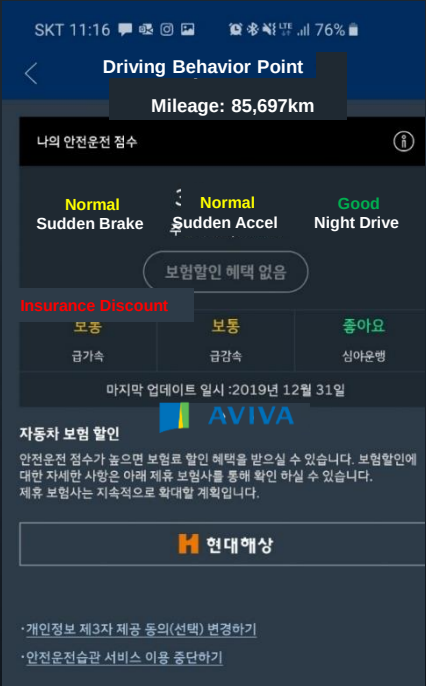
Real View (Support Landscape)

Insurance proposition add on, upload driving history & behavior with ADAS

Upload GPS info & ADAS
(LDWS, FCWS, uFCWS)



Display Driving History & behavior in the application



Sample UI

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THINKWARE
DASH CAM

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Thank you