A Synergetic Approach with Multiple Tizen Devices

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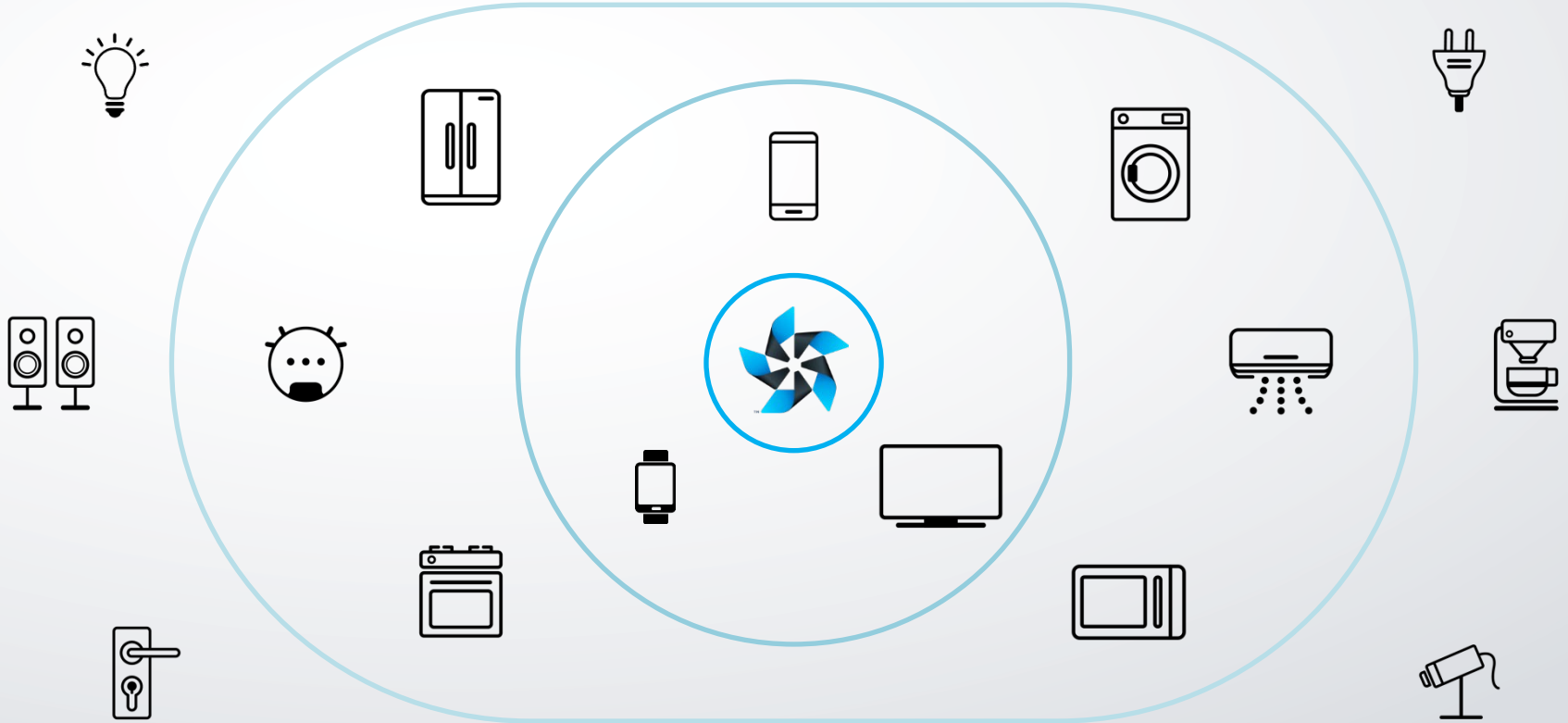
Samsung Electronics

Outline

- Background
- Concept Overview
- Key Feature & User Scenario
- How to use TIZEN PASS?
- Q&A

Background

TIZEN is expanding.



User Experience was

Few Devices

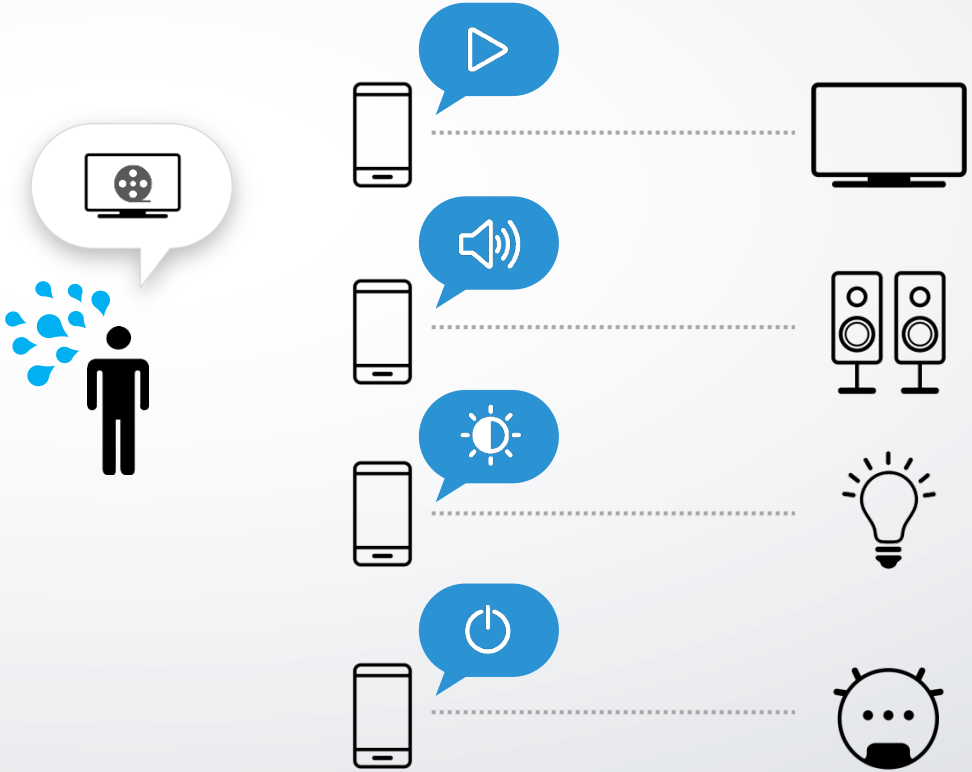
Few Tasks

User Experience will be

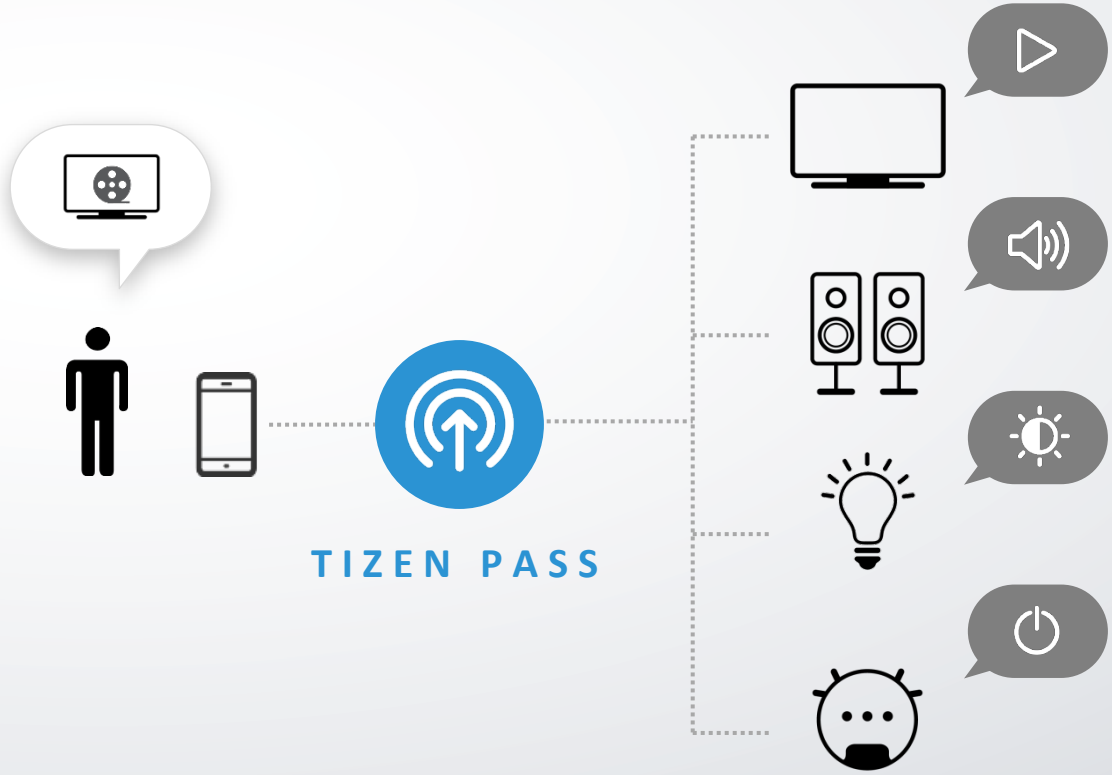
More Devices

More Tasks

So they might be doing



What it should be



TIZEN PASS

Concept Overview

Our solution

New Convergence Experience
more suitable for **multi device environment**
that works via broadcasting method

*“Tizen PASS aims to move beyond and ‘Pass through’ the existing barriers in multi-device environment.
It was also intended to resemble the act of ‘Passing’ an object from one to another for more intuitive understanding of the concept.”*

What it Does

More Things

More Services (Apps)

More Places

Action PASS

Multi Device Control

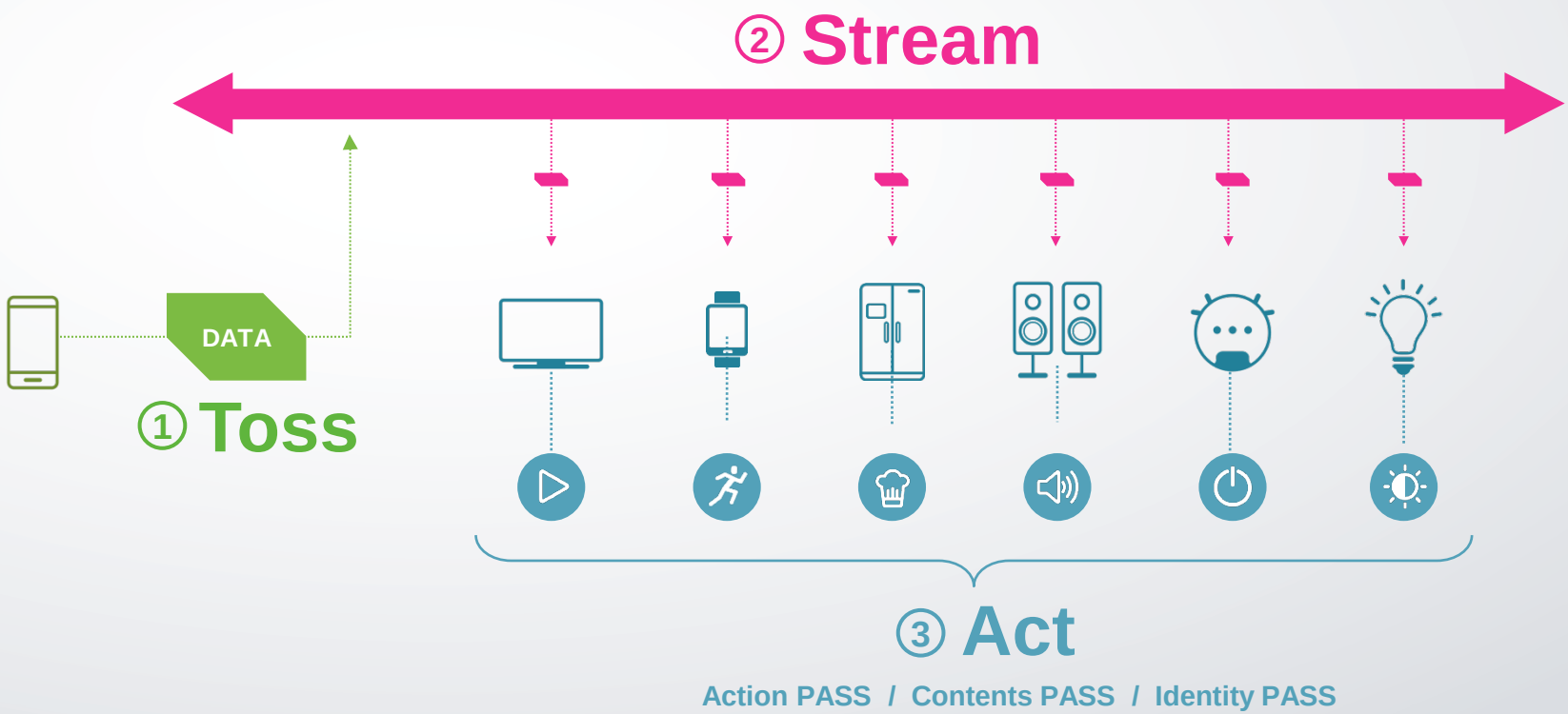
Contents PASS

Contents Sharing
& App Mash-Up

Identity PASS

Cross Device
Personalization

How it Works


② Stream
DATA
① Toss
③ Act
Action PASS / Contents PASS / Identity PASS

TIZEN PASS

Key Feature & User Scenario

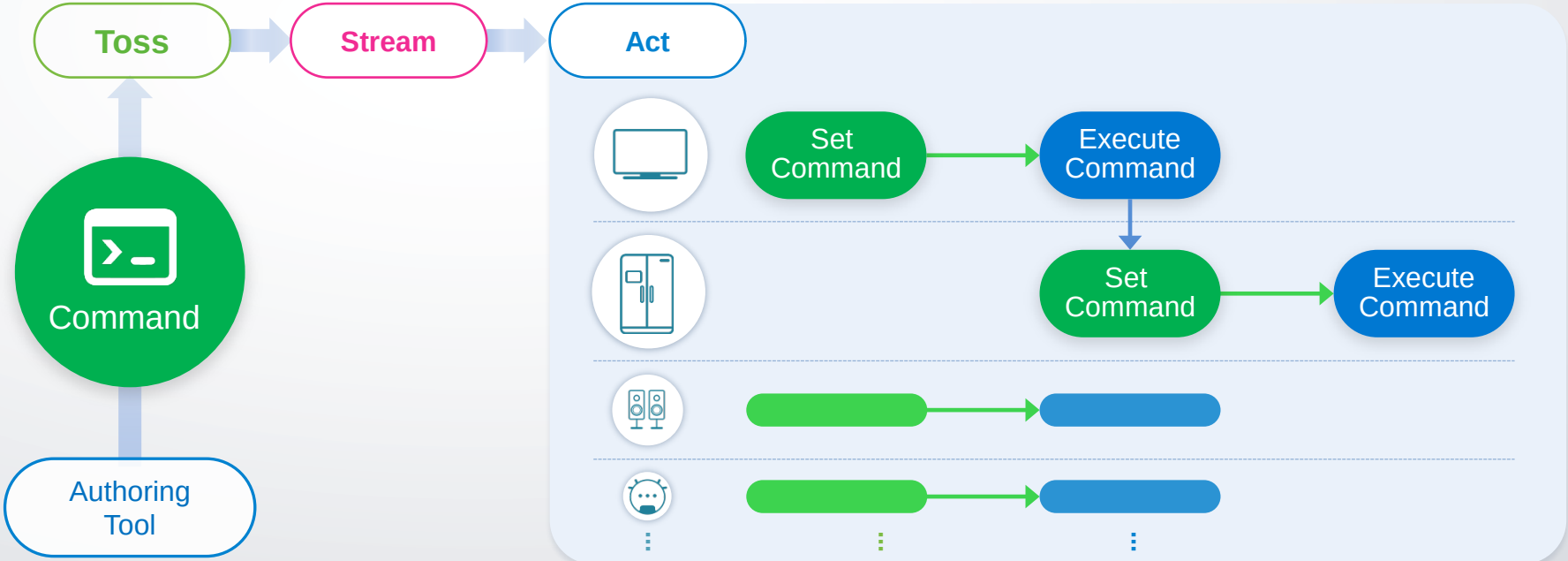
- Action PASS
- Contents PASS
- Identity PASS

Action PASS

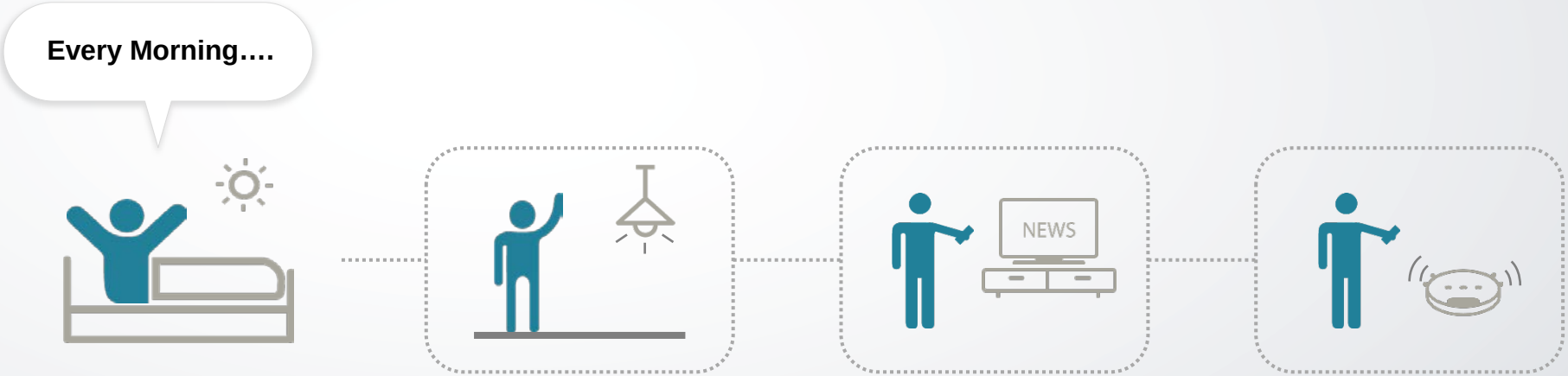
Automate Daily Tasks

Action PASS

Use authoring tool to Toss **customized commands** for multi-device control
(Simultaneously / Trigger Based)



Action PASS – Scenario



Action PASS – Scenario

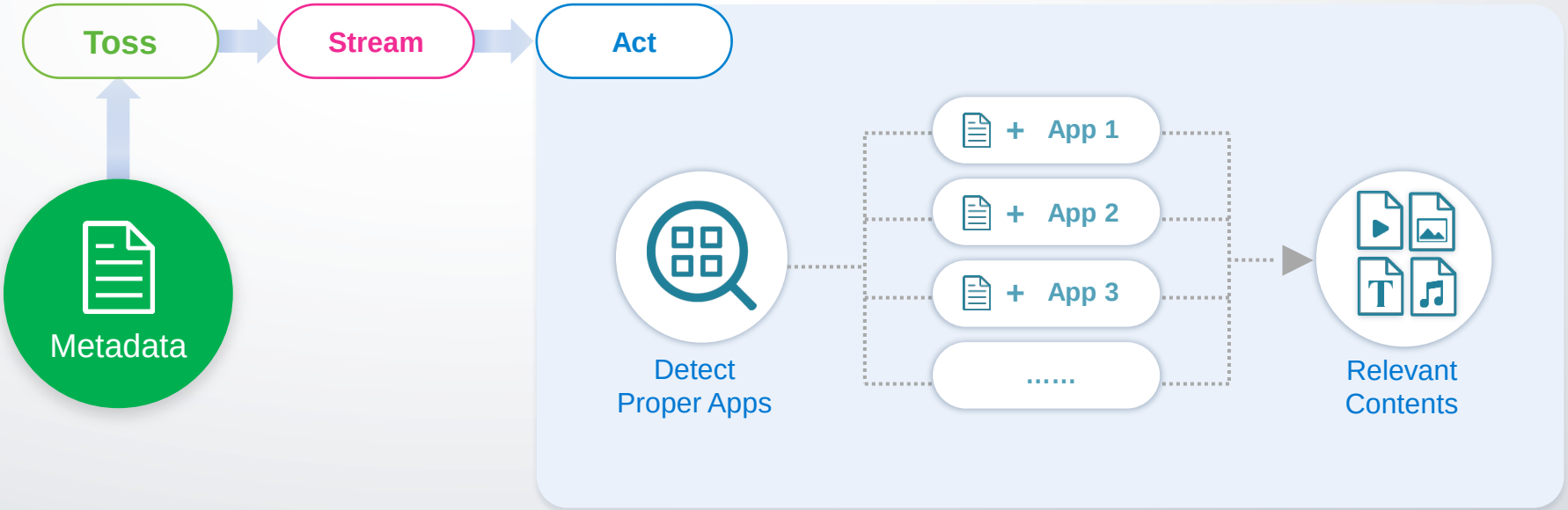
Action PASS – Scenario

Contents PASS

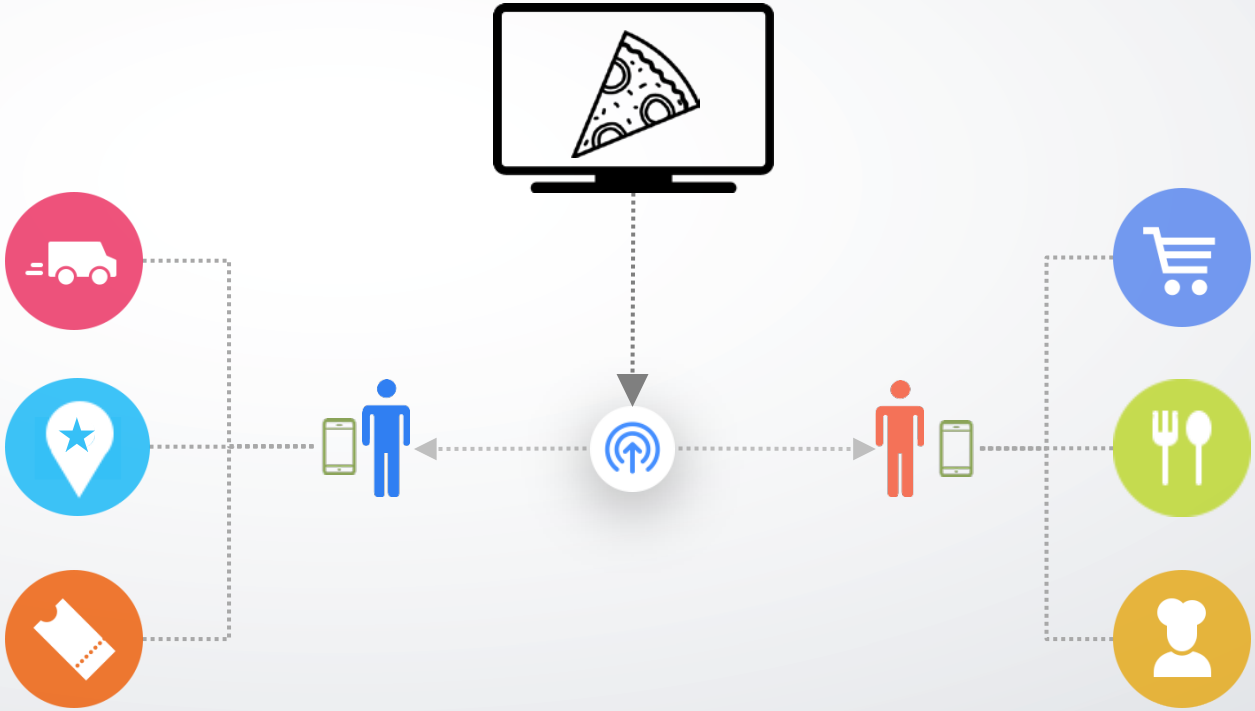
Relevant Contents at a Glance

Contents PASS

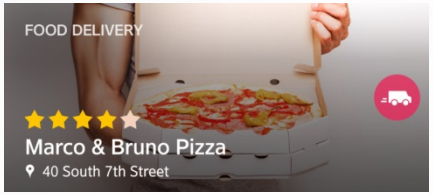
Toss Metadata to device connected to Stream.
When device receives data, it provides relevant information from proper apps



Contents PASS – Scenario (1)

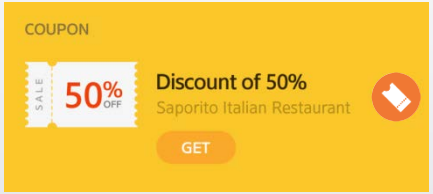


Contents PASS – Scenario (1)

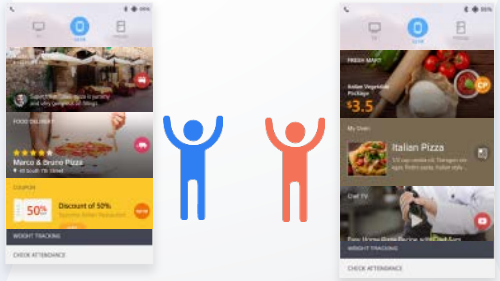


Food Delivery

Restaurant Review



Coupon

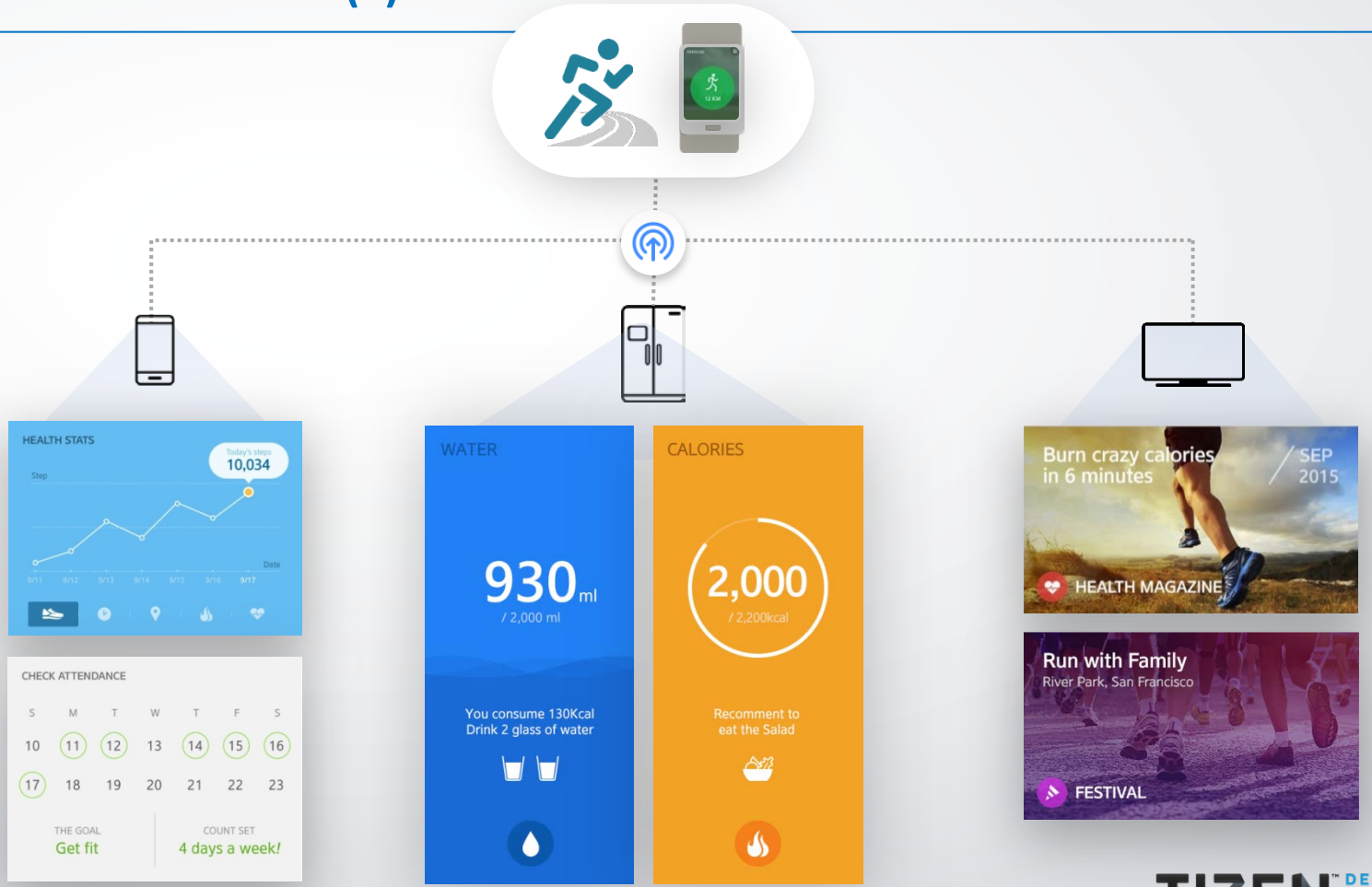


Shopping (Ingredient)

Recipe

Cooking Show

Contents PASS – Scenario (2)

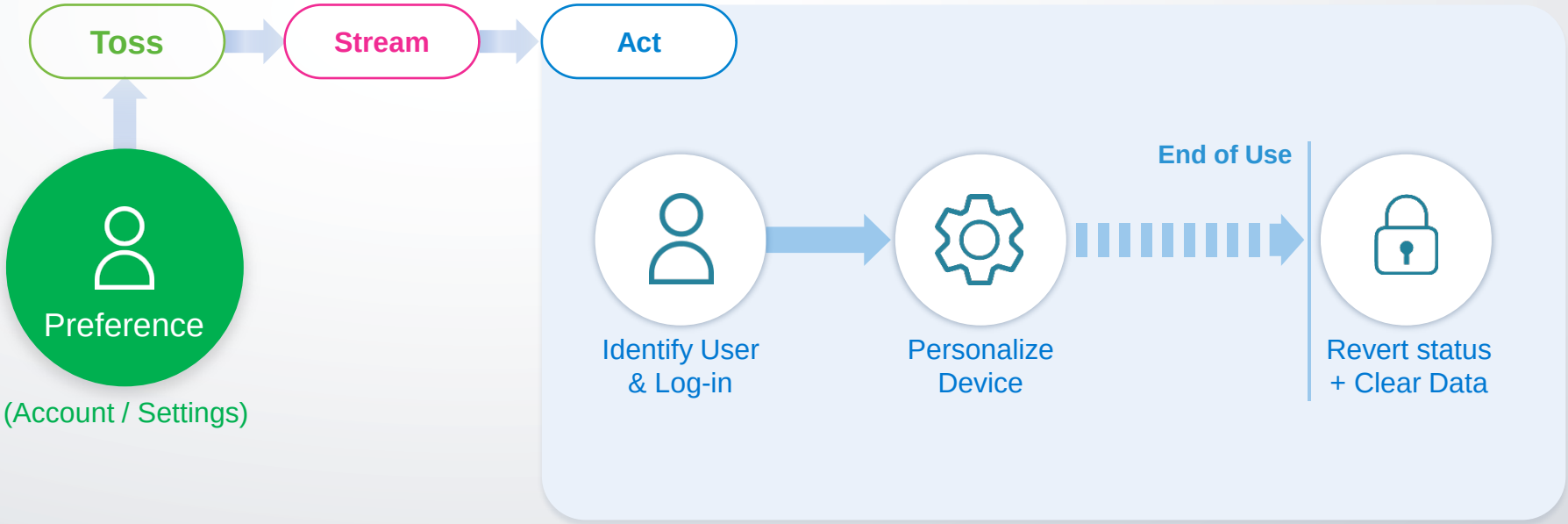


Identity PASS

Let every device welcome you

Identity PASS

Toss Preference information from private device to log-in & Personalize device.
(At the end of use, update & retrieve data)



Identity PASS– Scenario (1)

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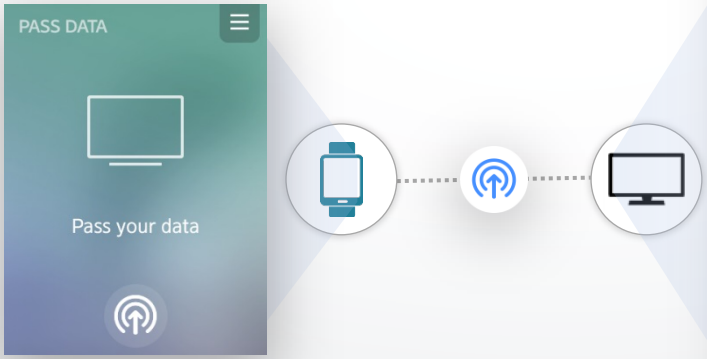
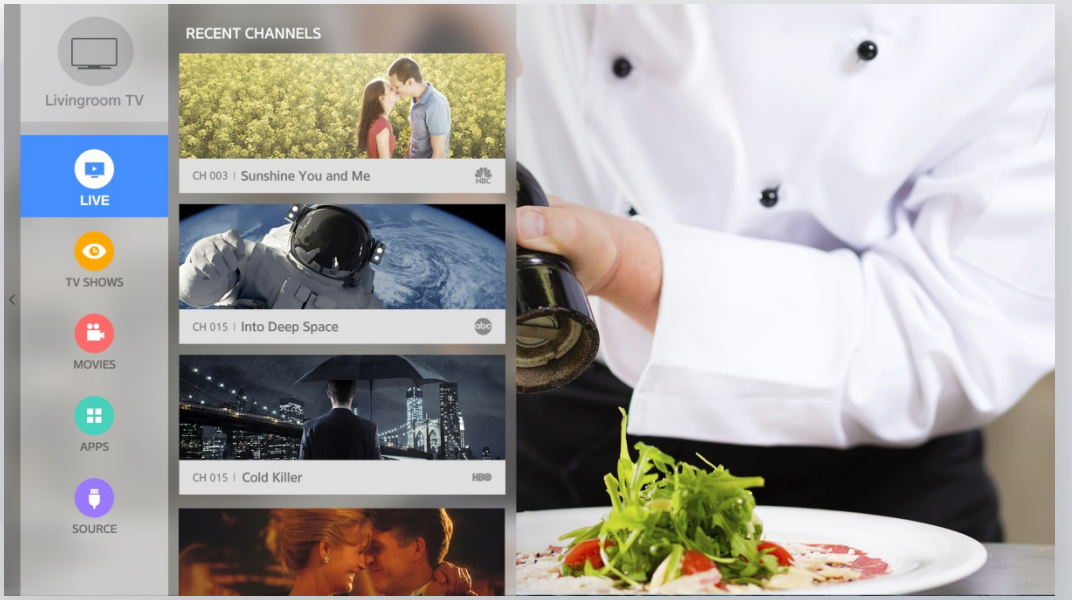
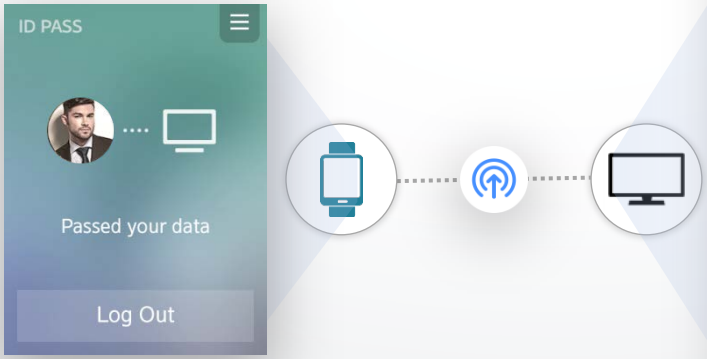


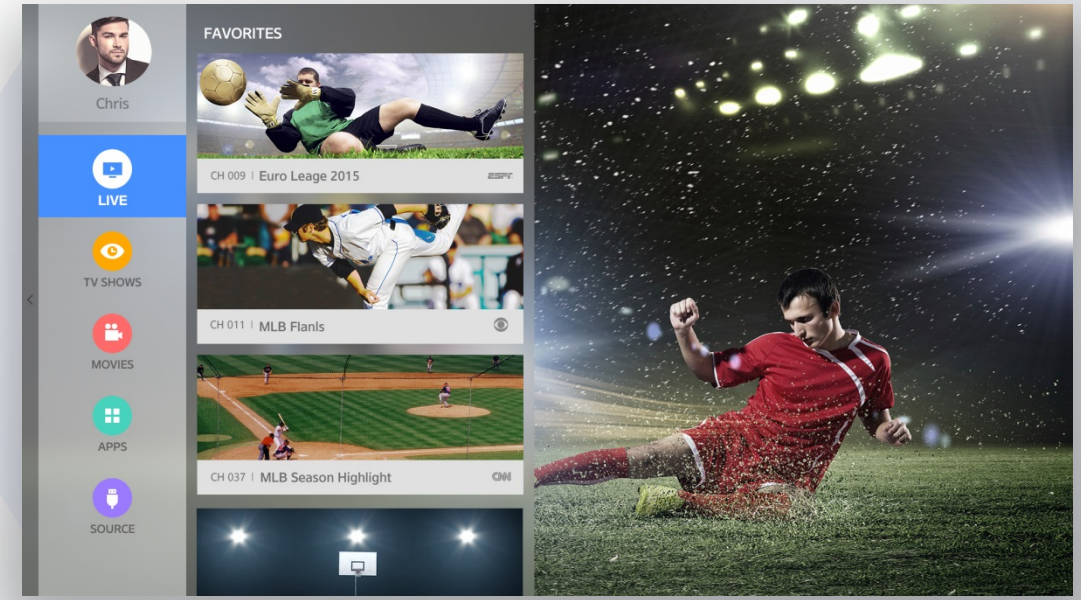
Guest Mode



Identity PASS– Scenario (1)

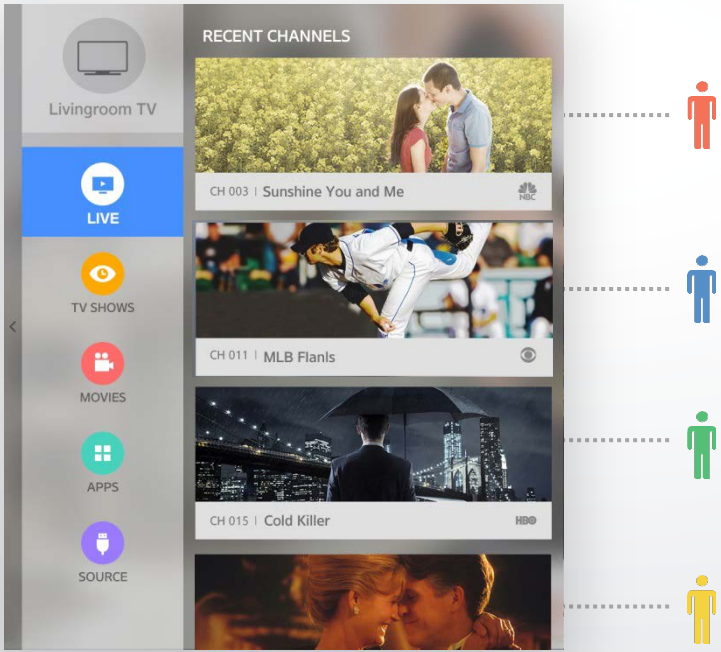


Chris Log-in



Identity PASS– Scenario (1)

Guest Mode



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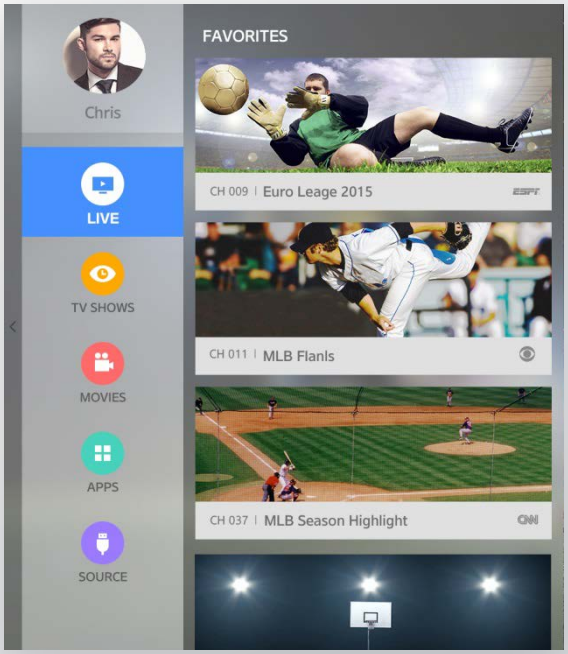
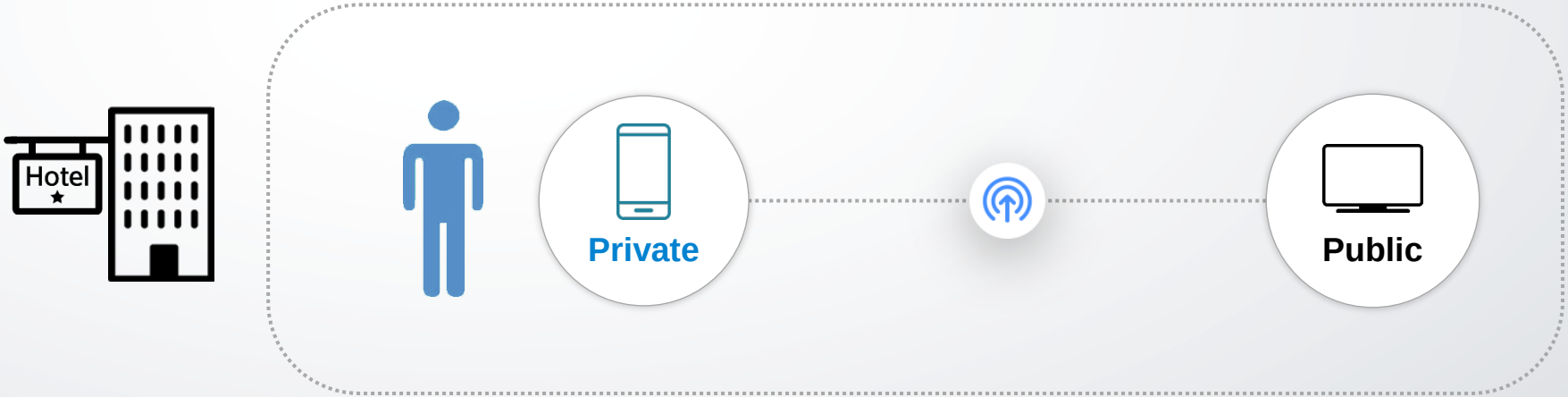
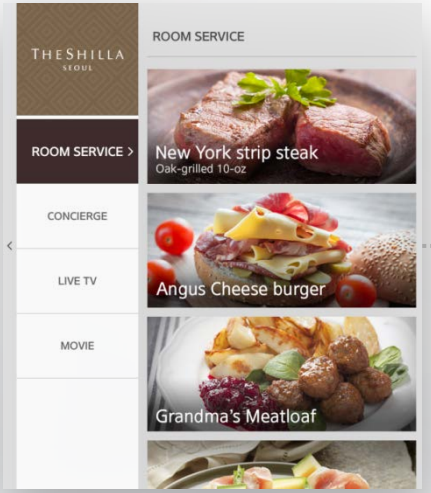


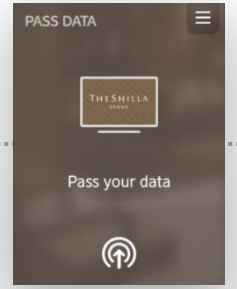
Identity PASS– Scenario (2)



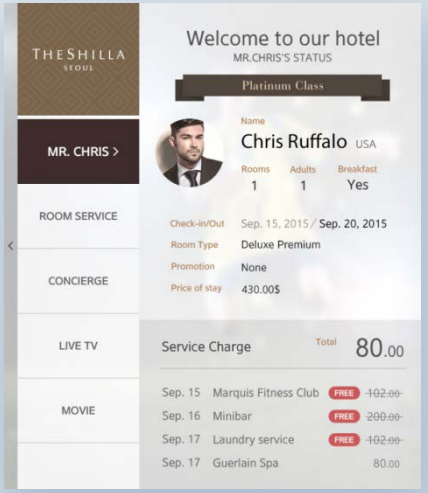
Identity PASS– Scenario (2)

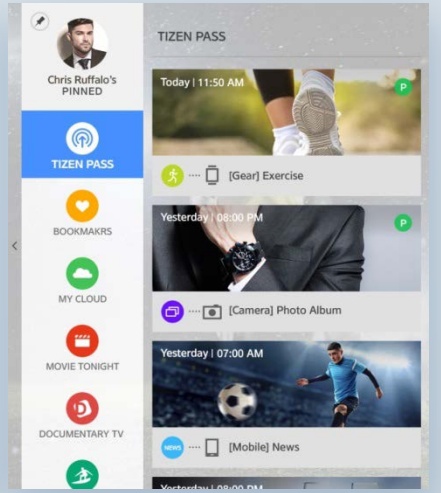
Hotel TV Default





Hotel TV – Identity PASS Log-in





What this all means - User

Action PASS

Customized
Multi Device Control

Automate
daily tasks

Contents PASS

Contents Sharing
& App Mash-Up

Relevant contents
at a glance

Identity PASS

Cross Device
Personalization

Let every device
welcome you

What this all means - Ecosystem

User

- Automate daily tasks
- Relevant contents at a glance
- Let every device welcome you

+

Developer

- More exposure which will lead to more app usage.
- Create rich experience by Tossed data from other apps.

→

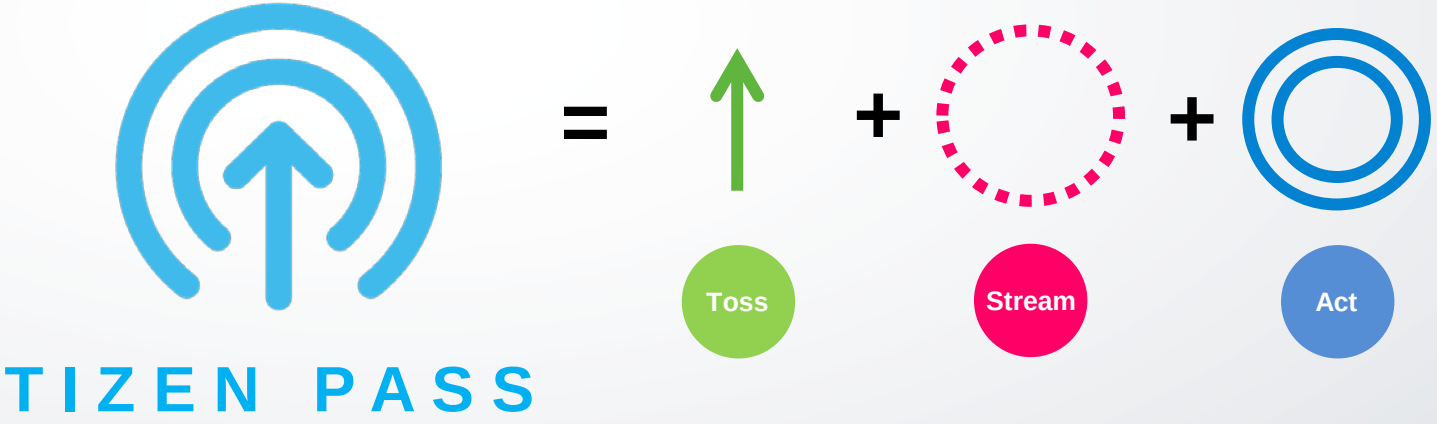
Ecosystem

- Encourage non-mobile players to join Tizen Eco
- Provide holistic experience that ties HW-SW-Service.

TIZEN PASS

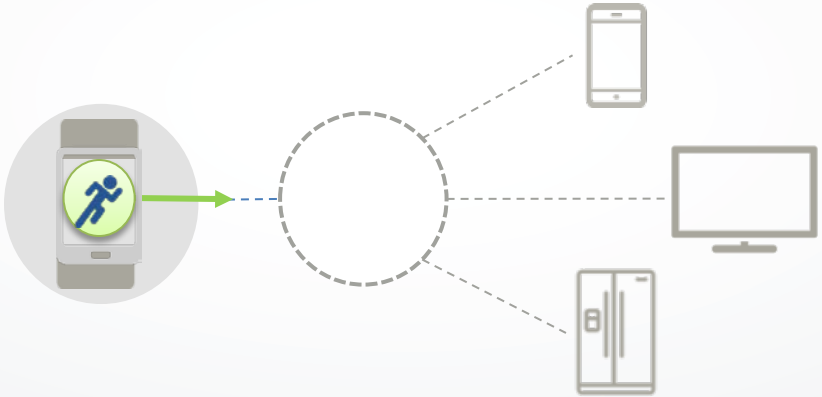
How to use TIZEN PASS API?

TIZEN PASS



Toss | Stream | Act

Toss the Data / Share the Data in Stream / Act with the Data



Data

```
{
        Target : all
        Service: health
        Type: streamed_data
        User: Jane

        { "state" : "running", "calories" : 7, "steps" : 40,
          "distance" : 106, "speed" : 25, "heartrate" : 114 }
}
```

D2D Inter-App Communication

Transparent NFS | D2D Service Binding

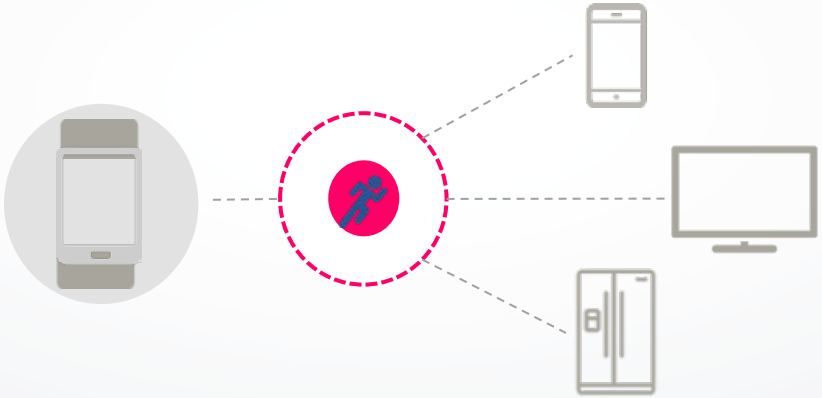
Service Adaptor (Service Federation)

D2D Inter-App Communication

- Header & Body Message Structure
- Key-Value Store
- JSON serialization

Toss | **Stream** | Act

Toss the Data / **share the Data in Stream** / Act with the Data



T.NFS

- mymobile
  - apps
    - health_competition
      - health_competition.json
- hometv
  - apps
    - health_brief
      - health_brief.json

D2D Inter-App Communcation

Transparent NFS | **D2D Service Binding**

Service Adaptor (Service Federation)

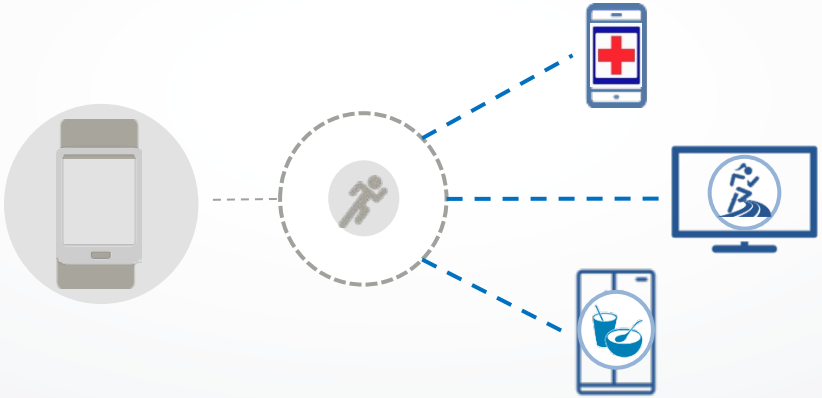
Transparent NFS(Network FileSystem)
- Device to Device file operations
- Multiple transport layer
- Notifications support

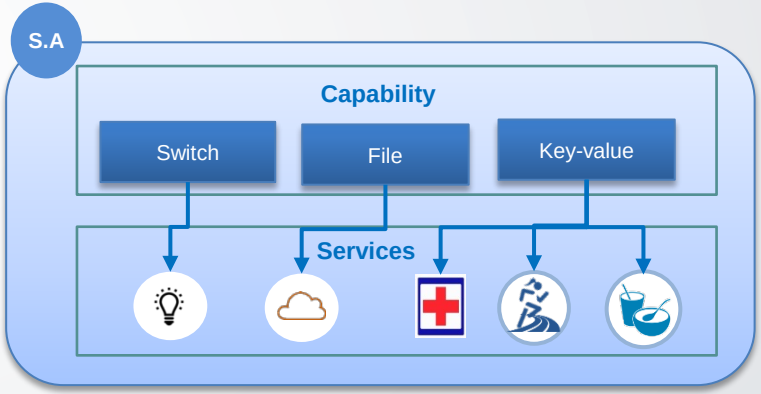
D2D Service Binding
- Search convergence services
- Utilize IoTivity and SSDP
- Group-based sync management

Act | TIZEN PASS

Toss Stream **Act**

Toss the Data / share the Data in Stream / **Act with the Data**





D2D Inter-App Communcation

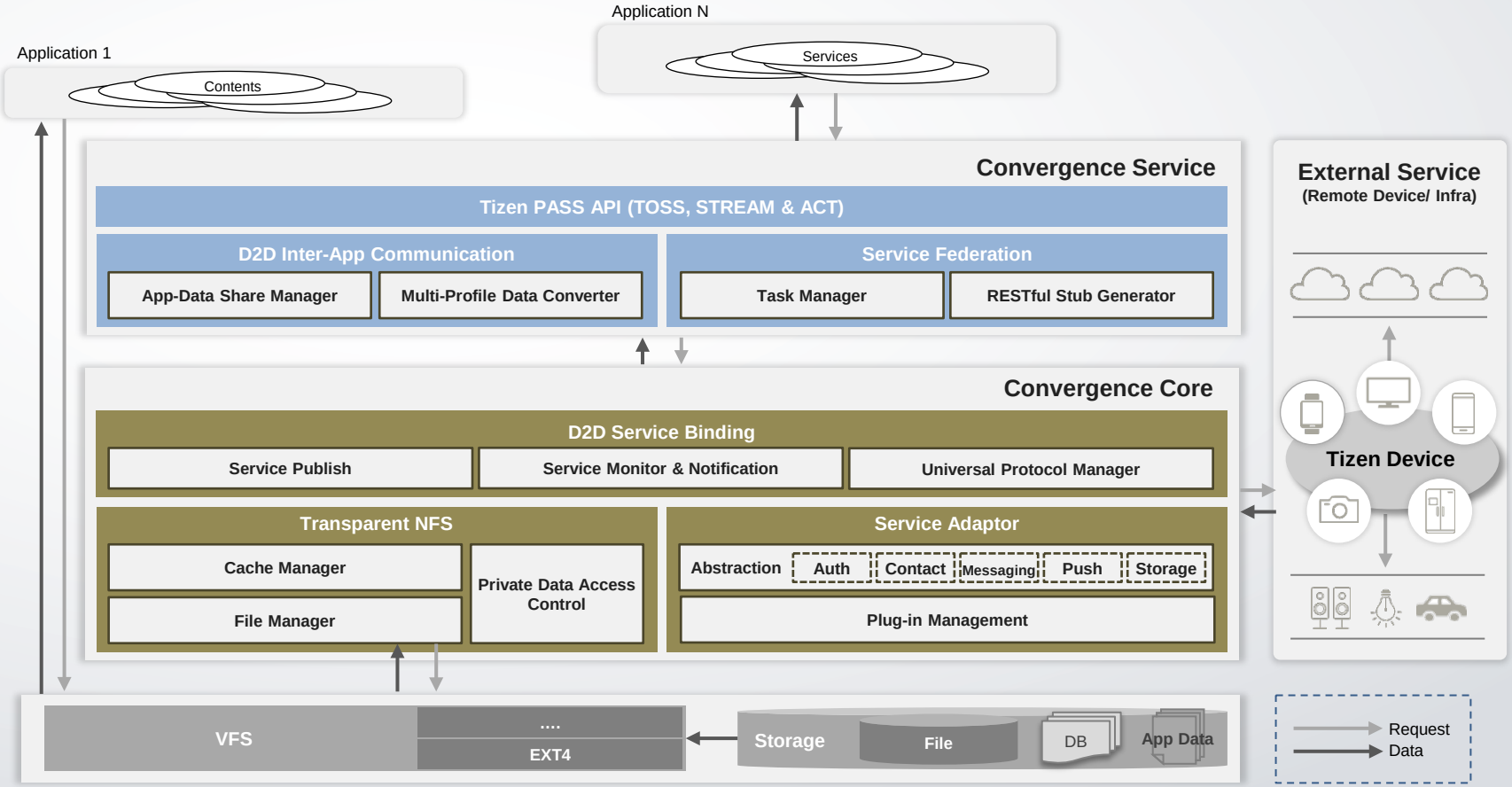
Transparent NFS

D2D Service Binding

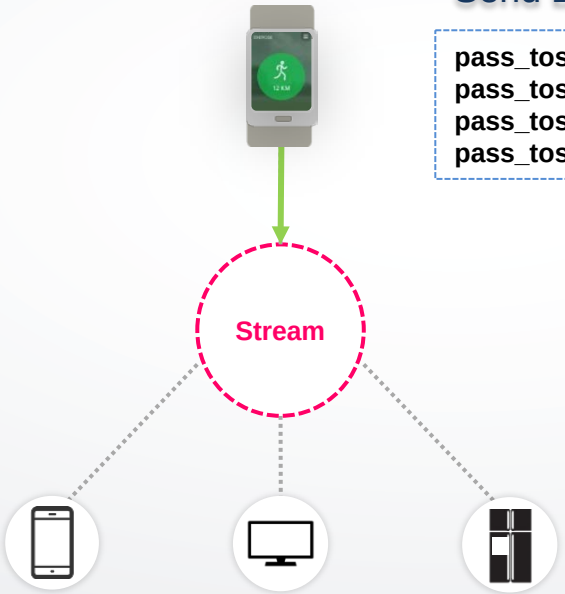
Service Adaptor (Service Federation)

Service Adaptor (Service Federation)
- Access Rich Services via Uniform APIs
- Download Plug-in of Service Providers
- Integrate External Service directly into your App
- Syncing & Launching Service across Devices

Architecture



How to use the TIZEN PASS API | Contents PASS

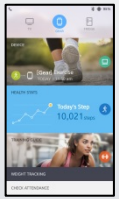


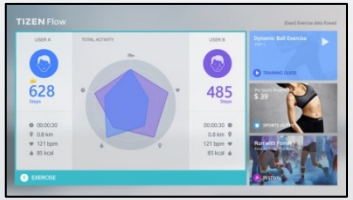
Send Data to Stream

```
pass_toss_create(pass_toss_h *toss)
pass_toss_set_function(pass_toss_h toss, pass_function_h function)
pass_toss_add_data(pass_toss_h toss, const char *key, const char *value)
pass_toss_send_to_stream(pass_toss_h toss, pass_toss_cb callback, void *user_data)
```

Receive Data from Stream

```
pass_stream_create(pass_stream_h *stream)
pass_stream_add_watch(pass_stream_h stream, pass_function_h function,
                      pass_stream_watched_toss_cb callback, void *user_data)
pass_stream_watched_toss_cb(pass_stream_h stream, pass_toss_h toss, void *user_data)
```





How to use the TIZEN PASS API | Action PASS

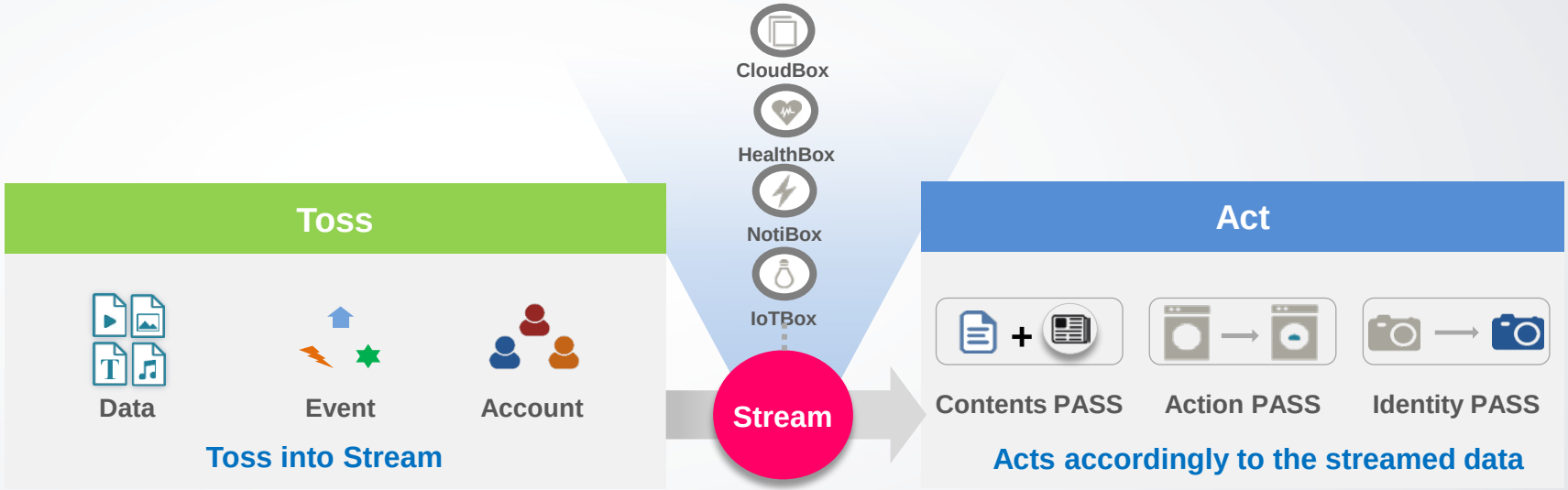
Single View on Stream

pass_stream_create(pass_stream_h *stream)
pass_stream_foreach_device(pass_stream_h stream, pass_device_cb callback, void *user_data)
pass_stream_add_watch(pass_stream_h stream, pass_function_h function, pass_stream_watched_toss_cb callback, void *user_data)

Launch Remote App across Tizen Devices

pass_act_create(pass_act_h *act)
pass_act_set_function(pass_act_h act, pass_function_h function)
pass_act_add_data(pass_act_h act, const char *key, const char *value)
pass_act_send_launch_request(pass_act_h act, pass_act_cb callback, void *user_data)

Summary of Device Convergence



Easy Data Sharing & Remote App Control between Devices

D2D Inter-App Communication / Transparent NFS / D2D Service Binding / Service Adaptor

Thank You

Q&A