



**GSC** | 22  
MONTREUX, SWITZERLAND



# Intelligent Phone

## – AI Enabled

Montreux Switzerland, 26-27 March 2019





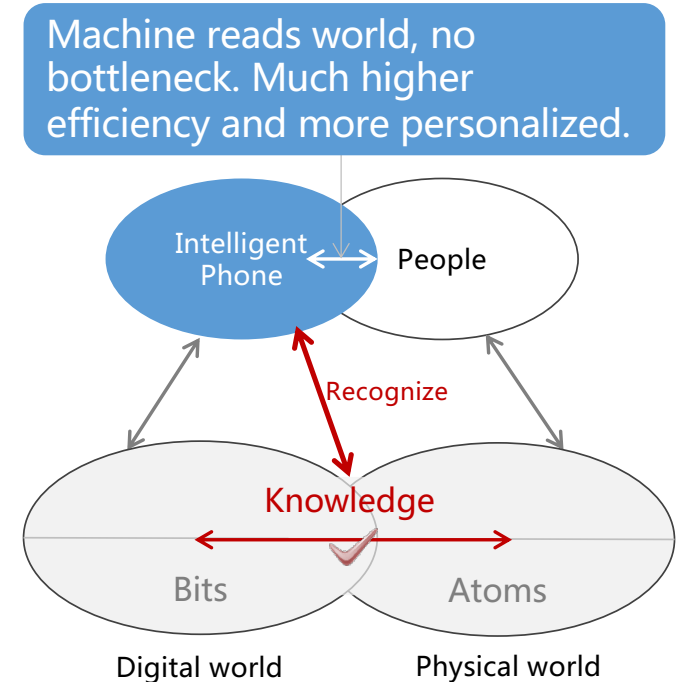
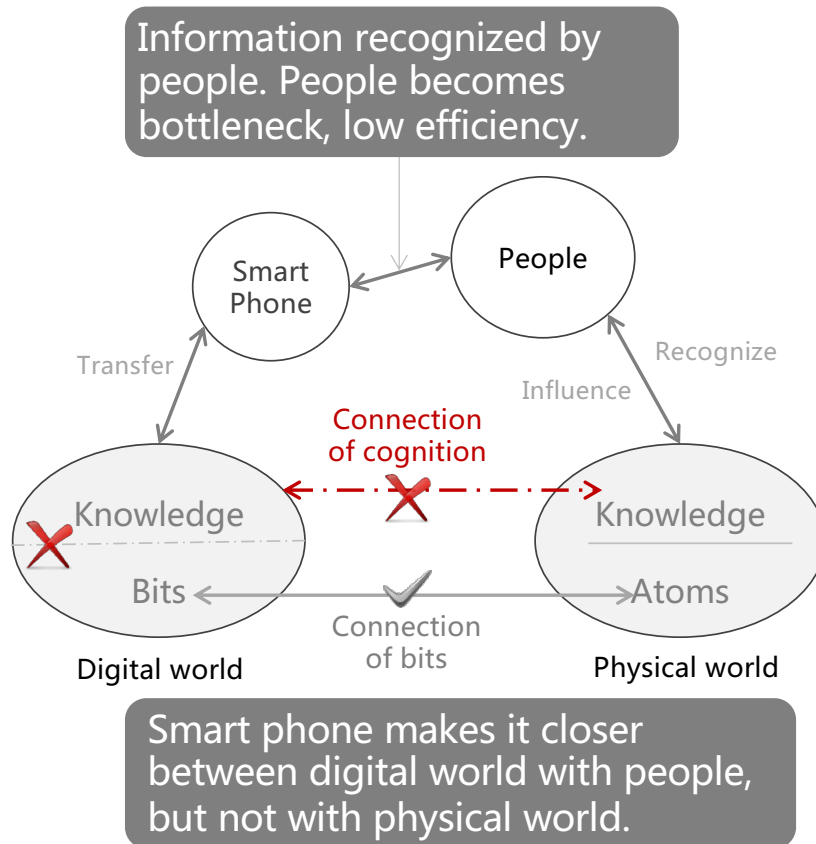
# Smart Phone + AI = Intelligent Phone

Enabled with AI, the next generation after Smart Phone is Intelligent Phone.

Facing data exploding, it means accessing information more accurately, quickly, automatically and intelligently.

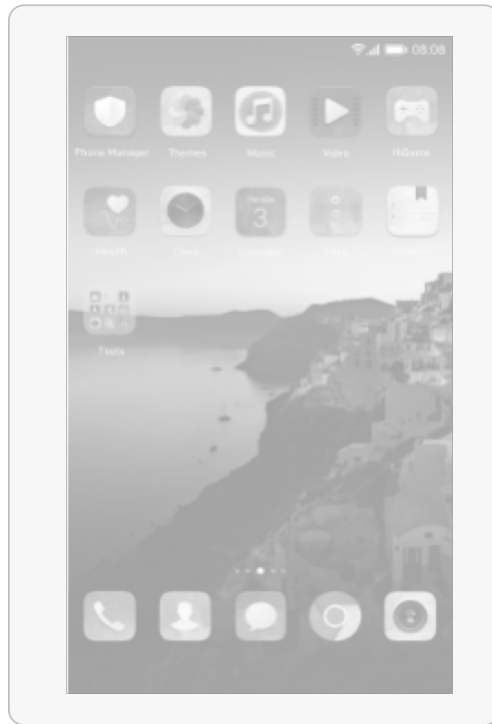
Combined with 5G, the experience will be “Whole world in a hand”.

# Revolution: From bit to cognition

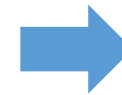




# Revolution: From GUI to CUI



GUI  
By touching

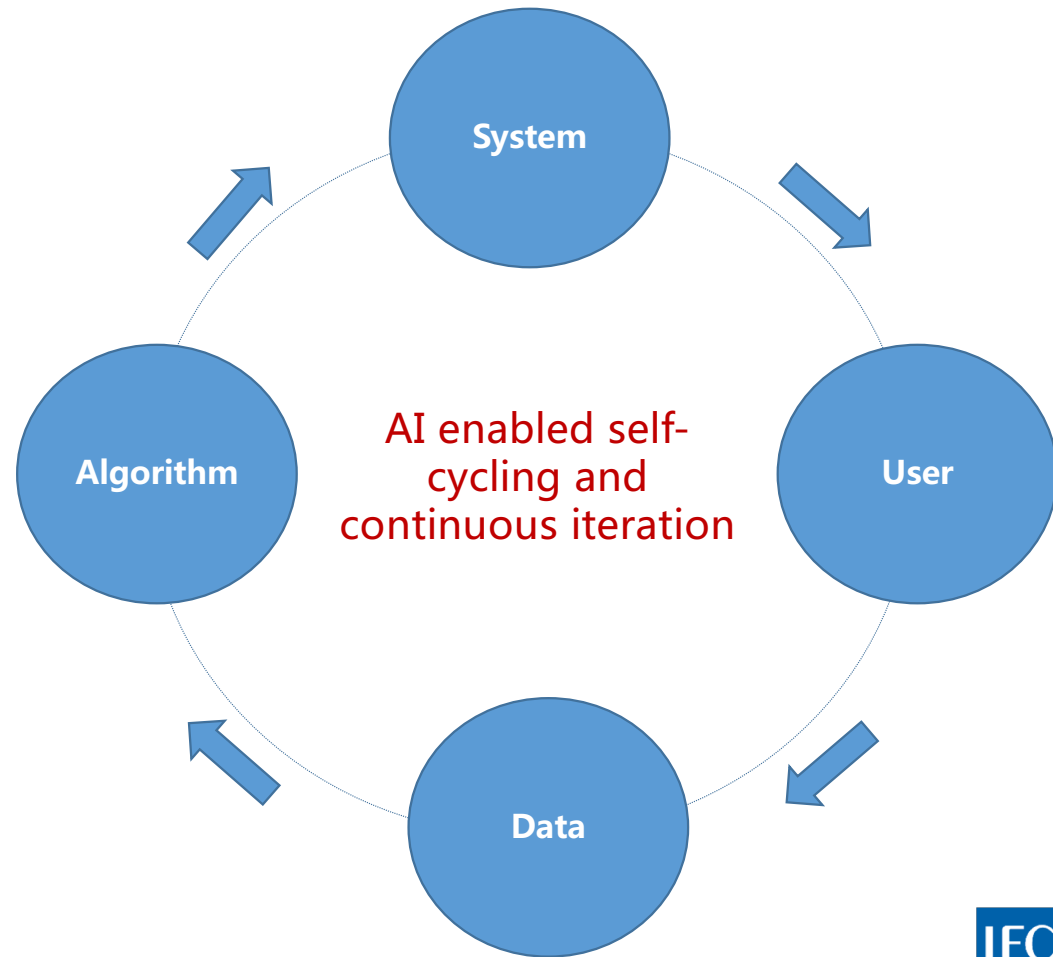


**Conversational user interface**  
By natural language  
or Text / picture / video



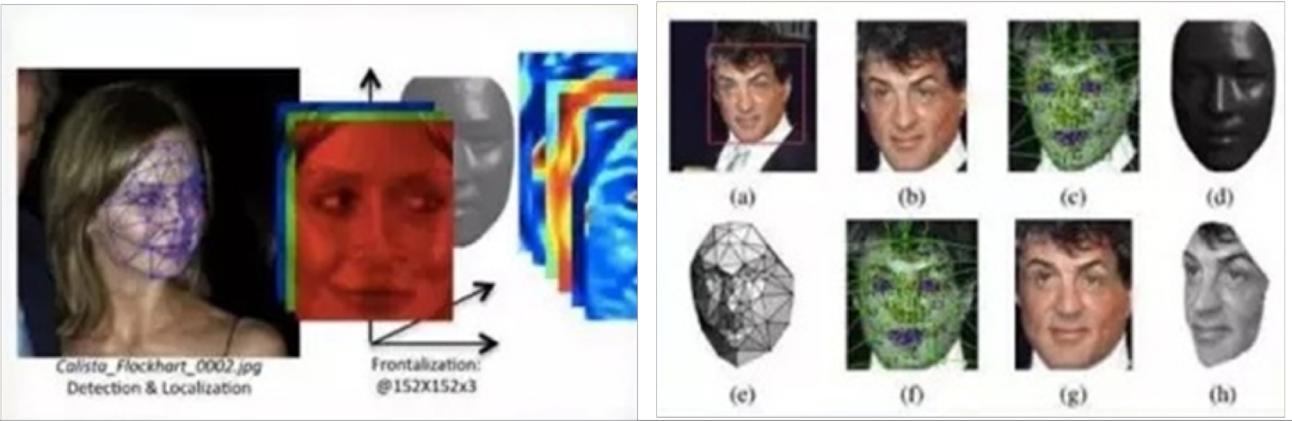


# Learning without surveillance is core

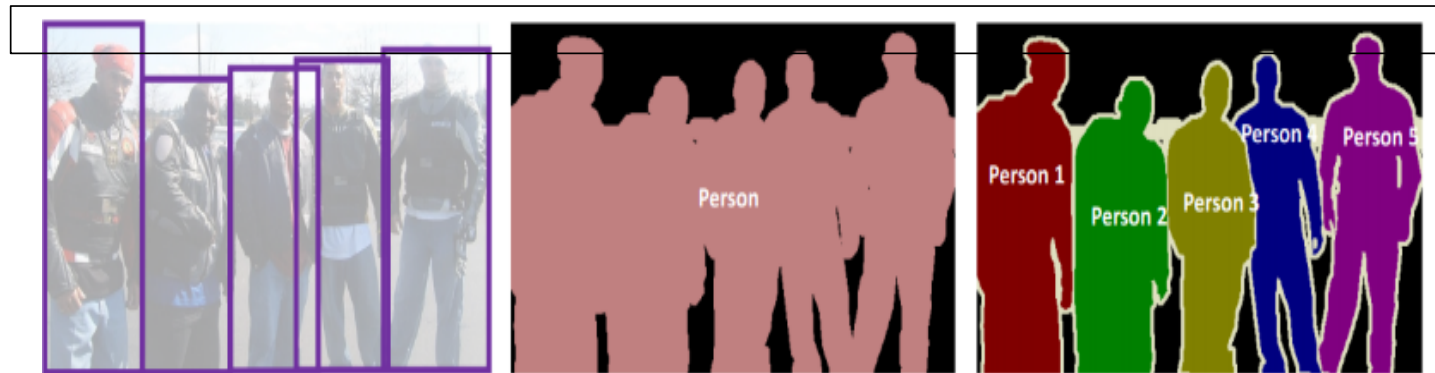


# AI vision: face recognition

97% face recognition accuracy, better than human



# AI vision: object processing



Object Detection



Quick recognition on abundant objects upon different scenarios

Semantic Segmentation

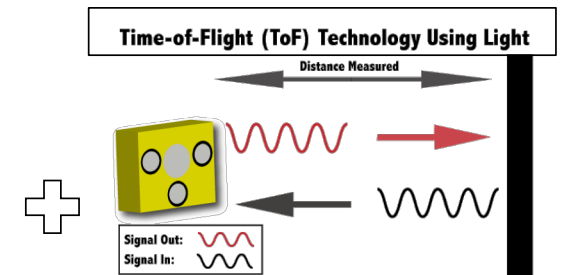


Accurate semantic segmentation on different kinds of objects

Instance Segmentation

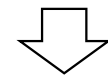


Further segmentation on instances of one category



3D modeling tech.

3D

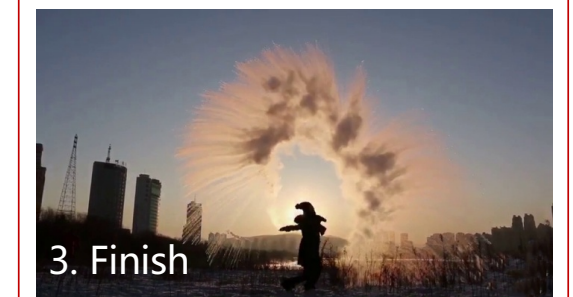
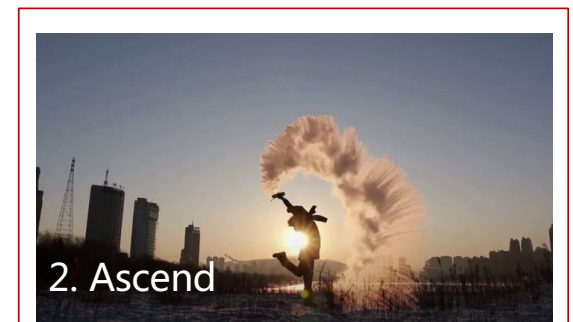
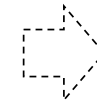
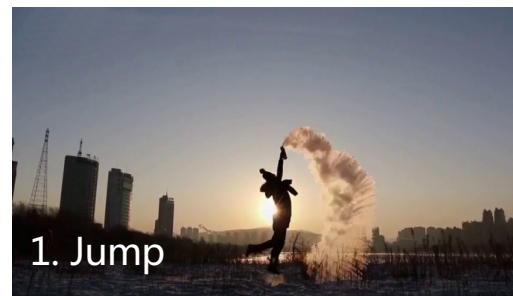
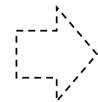
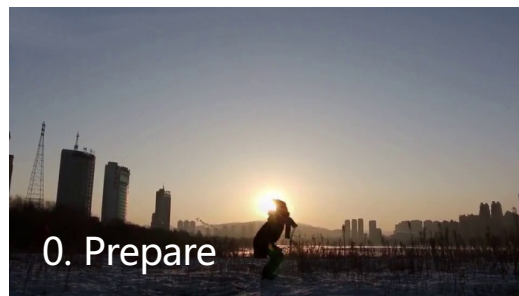


- Real 3D structure based modeling and optimization
- Real 3D distance based visual understanding and optimization
- ...



# AI vision: photo combination

## Photo combination for nicer pictures



- (1) Understand / predict the action and automatically decide the best timing of photographing
- (2) Combine towards a best picture and propose to the user

# AI vision: video refining

After Codec, the video quality will be lower than the origin. Super Definition Algorithm is needed to recover distortion from Compressing & Decompressing as well as Coding & Decoding.

Super Definition Algorithm' s Neural Network model should balance computing performance and energy consumption efficiency for real time video.

Comparing with still picture, it' s more difficult for users to focus on video. To achieve subjective user experience, more optimized model is necessary for Super Definition Algorithm.

Low definition video

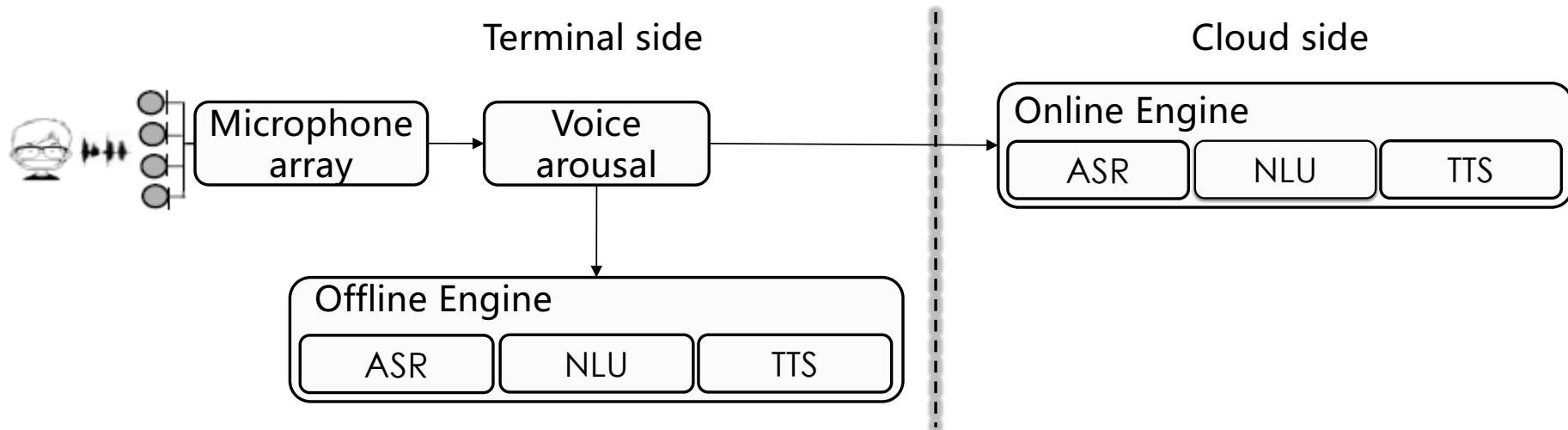


High definition video



**Depending on Super Definition Algorithm, low definition video could be rebuilt towards high definition.**

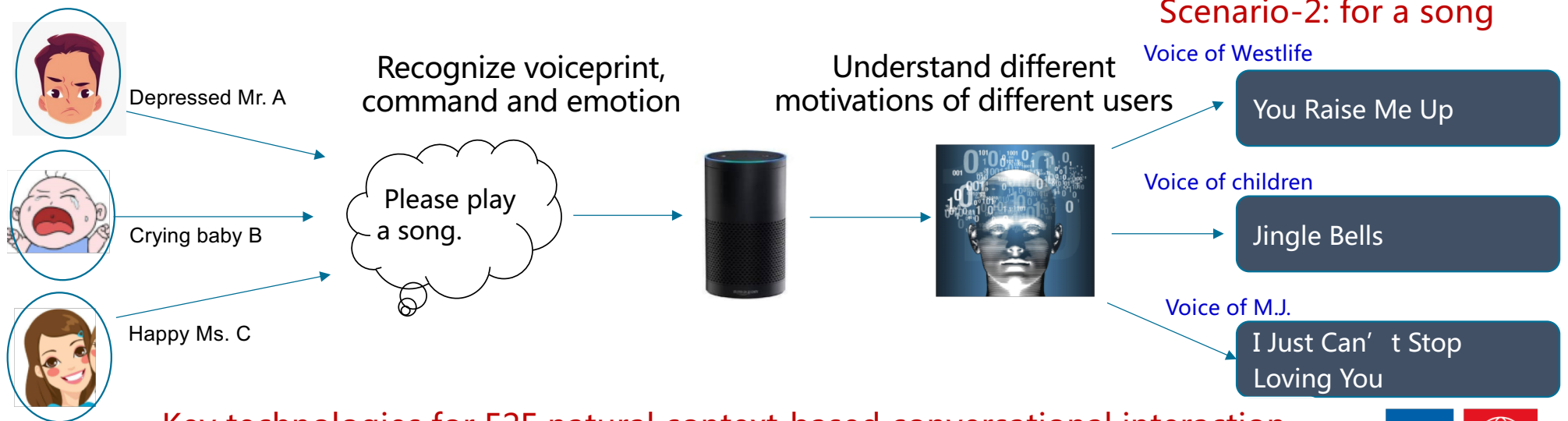
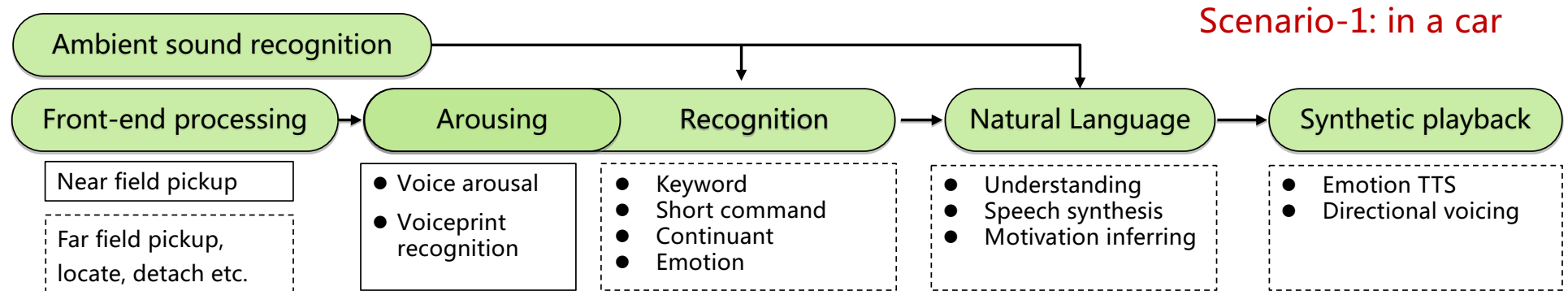
# AI hearing: Natural Language Processing



ASR: Automatic Speech Recognition  
NLU: Natural Language Understanding  
TTS: Text To Speech

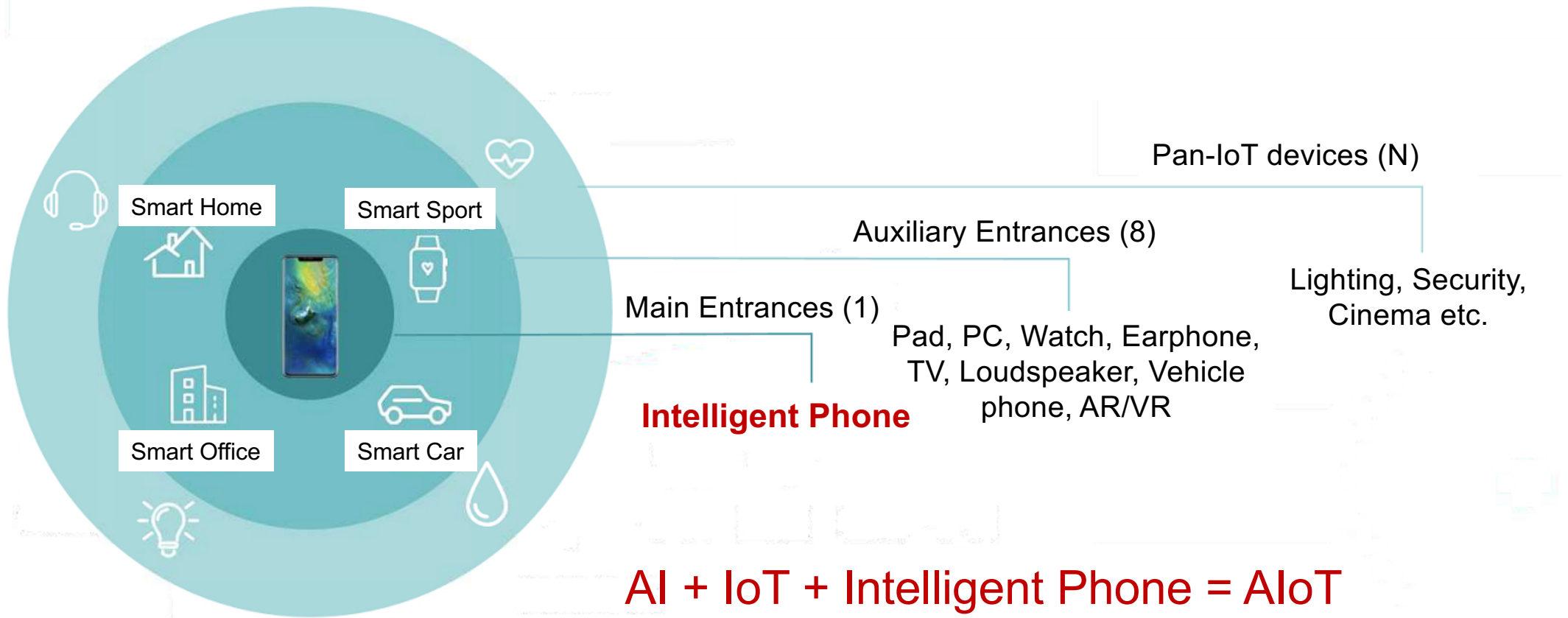
**NLP is becoming more and more mature.**

# AI conversation: Context-based interaction

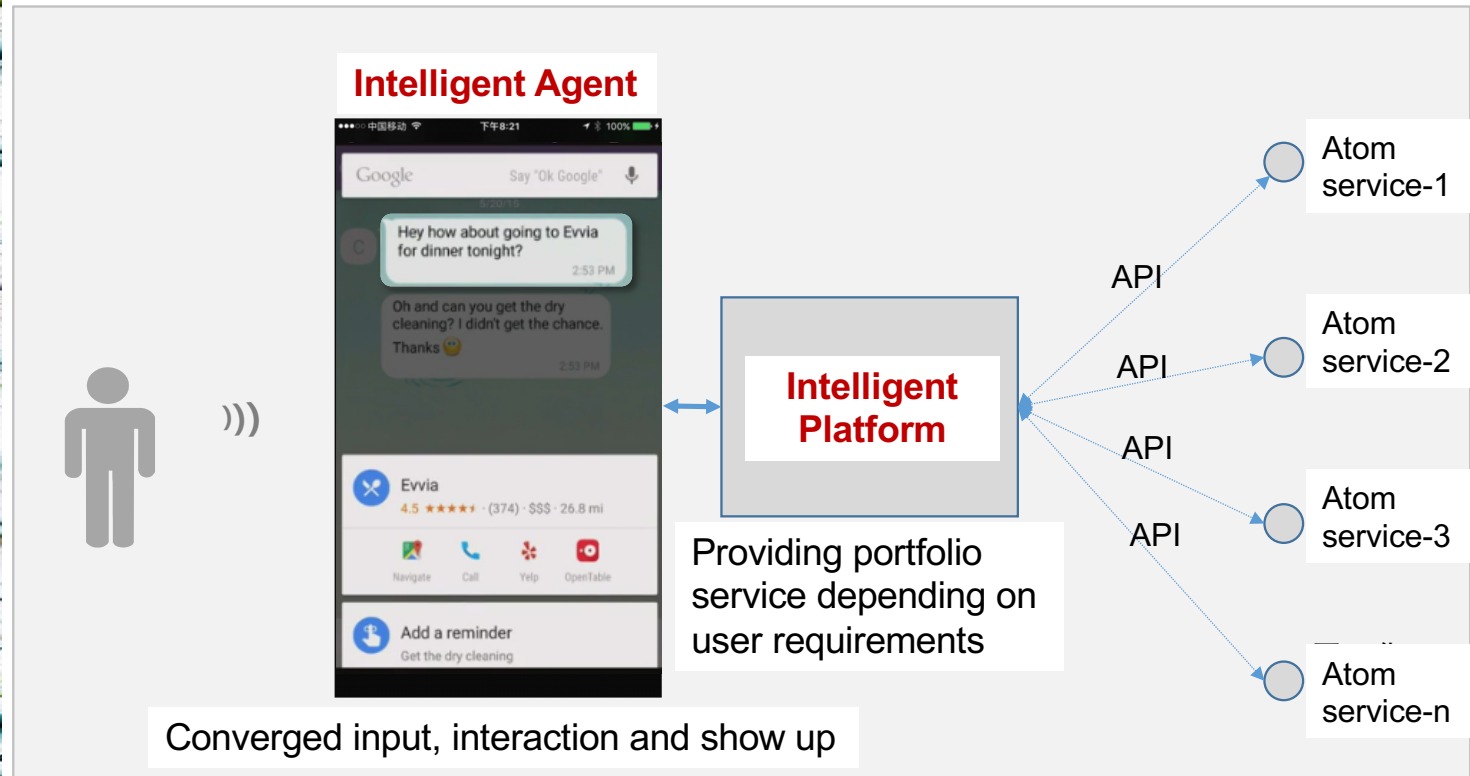


Key technologies for E2E natural context-based conversational interaction

# AI sensing: AIoT achieving smart life



# Atom services for Intelligent Agent





## Possible standardization points

- AI Ethics
- AI Security
- AI Service API
- CUI performance baseline
- Performance KPIs of AI vision, hearing, conversation
- etc.

# Thank you



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