Vision: Evolution of Big Data

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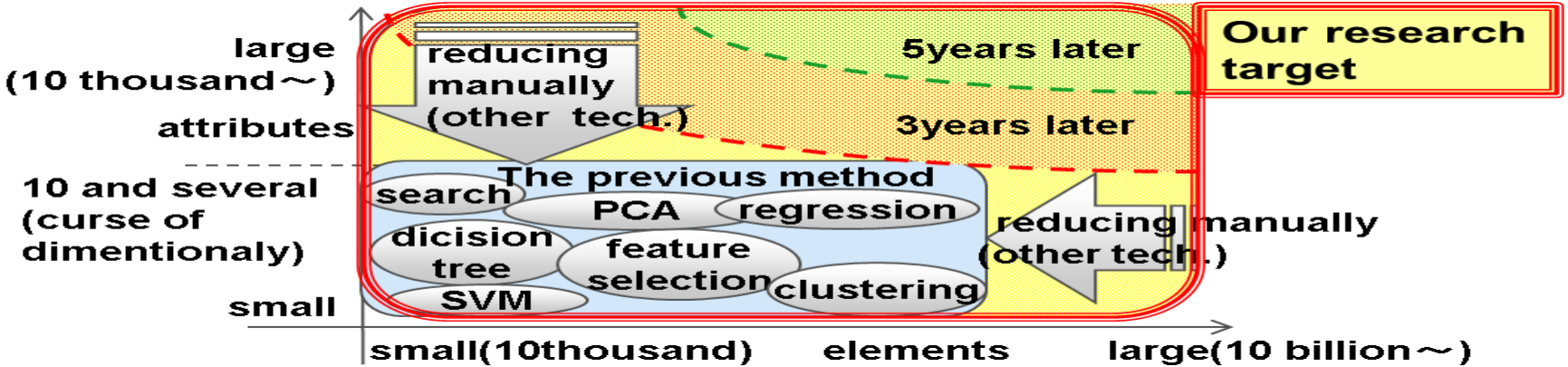
Mapping every object and phenomenon in the world

Problems

- We have to analyze very complicated phenomenon consists of large amount of attributes.
- We think processing algorithms for analysis should be as simple as possible because data set is so huge.

Our new direction to the evolution

- Based on a proprietary application of modern mathematical(geometric, algebraic) techniques



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One of the tech : Unstructured Big Data Search

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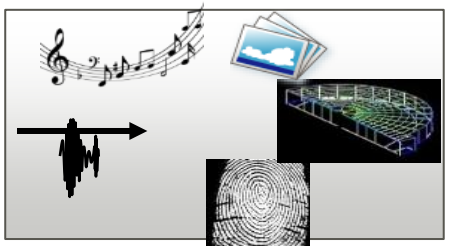
Problem

- Unstructured data: audio, video and sensor data
- Similarity search for unstructured data is expensive and slow



Overview of Technology

- Convert raw unstructured data into high dimensional vectors
- Performing high-speed similarity searches by using bit operations not arithmetic calculations
- Highly accurate search through Fujitsu original machine learning technologies
  - Original feature selection method for Locality-Sensitive hashing

Key Benefits of Fujitsu Technologies

- 10-100 times speedup over other technics
- 2 times accuracy improvement over state-of-the-art technologies

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Example of Unstructured Big Data Search

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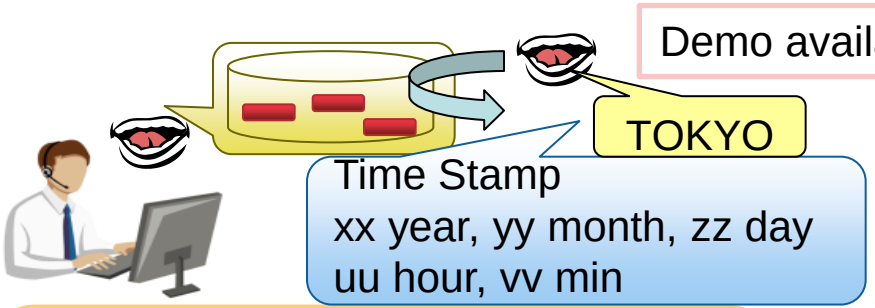
Service Concept 1 : Acceleration of existing unstructured data search technology

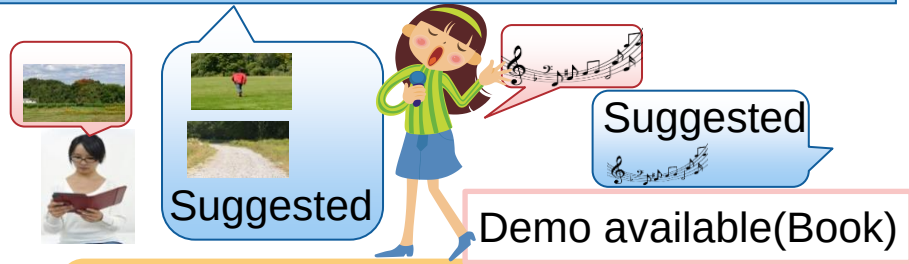


Determines time stamp
when a specified word was spoken

Personal identification using biometric data
(for local government, etc.)

Service Concept 2 : Approximate-similarity searches on massive amount of data

Survey of flaws originating from shape



Book/music recommendations

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Demonstration

- (I will run a demonstration if I have a remain of 1 min.)

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Appendix for QA

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Key technologies (detail)

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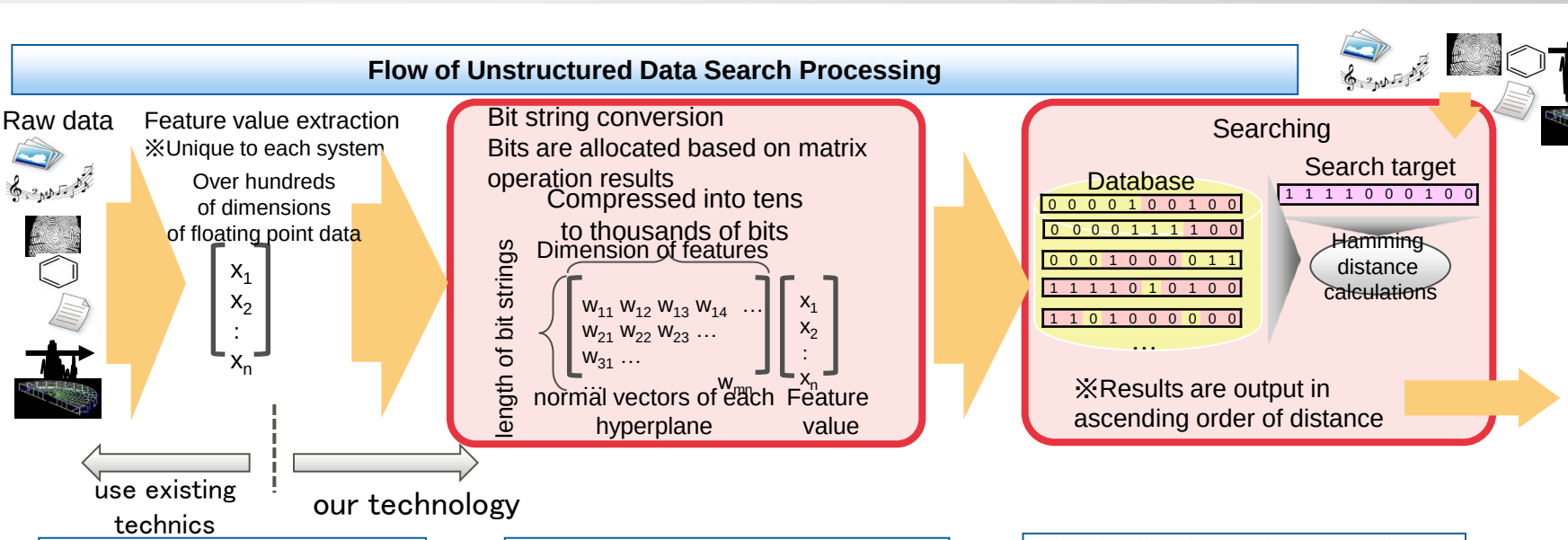
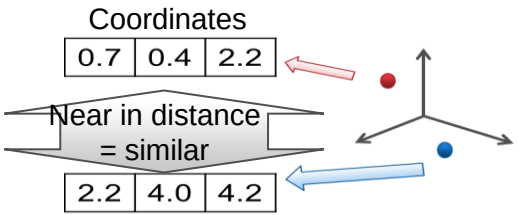
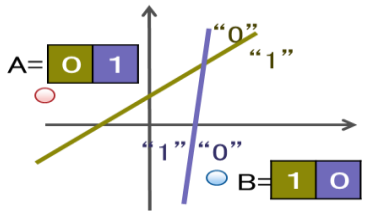


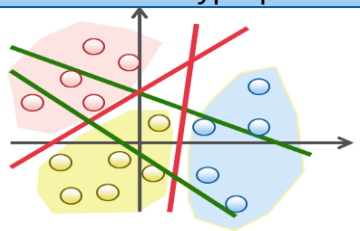
Mapping unstructured data in space



Compresses information by approximating coordinates in space divided by hyperplanes



Highly discriminating selection (red) made from among tens of thousands of hyperplanes



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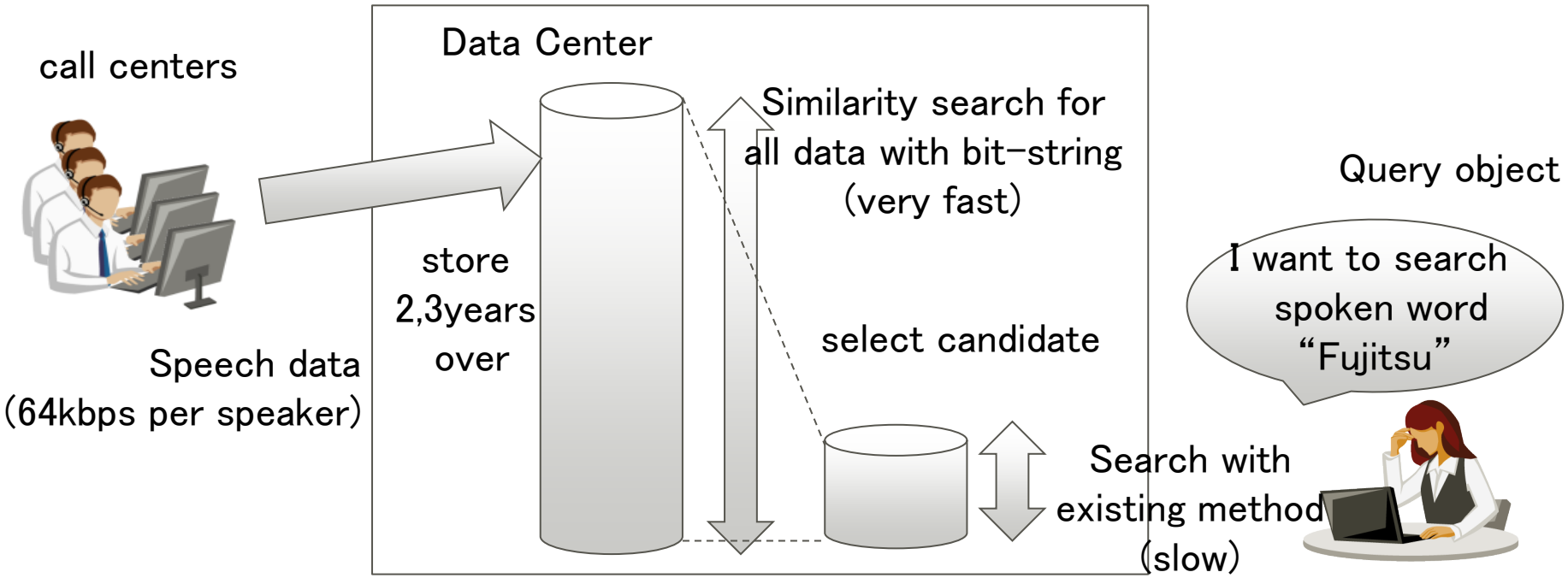
Example of system configuration(For Speech)



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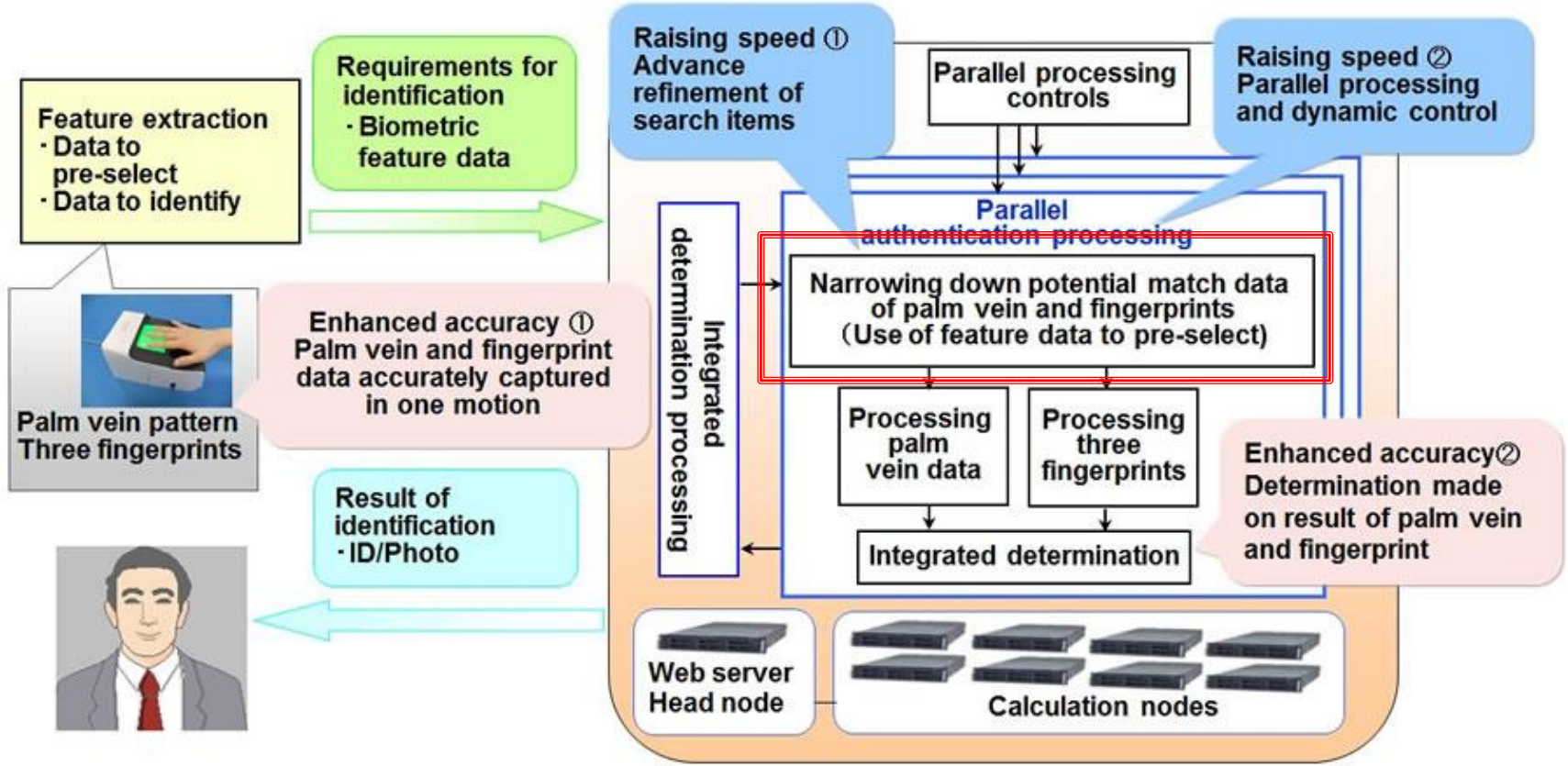
Example of system configuration(For Biometrics)



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