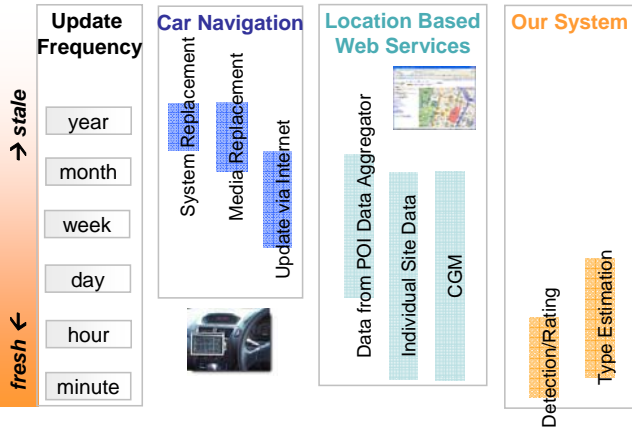


[IS04 3079] Real-time POI detection and rating using floating car data

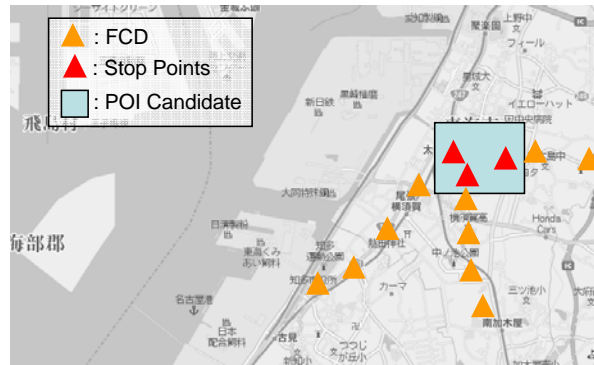
Osamu Masutani^{1*}, Hirotoishi Iwasaki^{1*}, Kenji Tei^{2*}, Yoshiaki Fukazawa^{2*}, Shinichi Honiden^{3*}
^{1*} Denso IT Laboratory, Inc. ^{2*} Waseda University, ^{3*} National Institute of Informatics

Freshness of POI Data

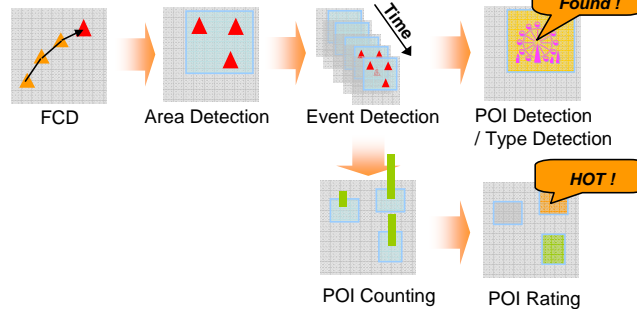


TRIPOLI*

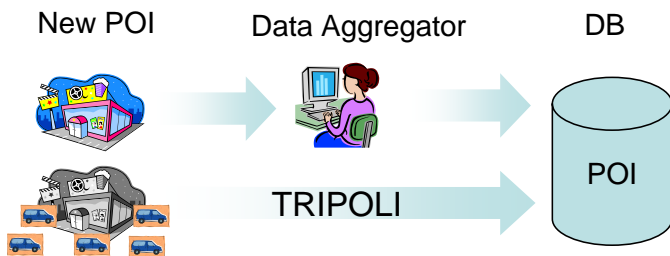
* Transportation Intelligence by Probe Oriented Location Identification
 Application: Automatic POI detection and rating from FCD



Analysis Procedure



Manual v.s. Automatic POI Data Aggregation



Advantage of TRIPOLI

Supplementary to the conventional data aggregation.

	Conventional	TRIPOLI
Registration	Manual	Automatic
Delay	Medium	Short
Contents	Rich	Poor
Quantization	Diverse	Unified
Coverage	High	Very High

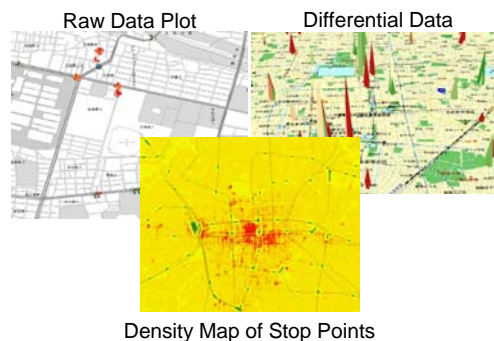
POI Type Detection

POI type is estimated by various kinds of clues.

Type	Feature
Spatial	location
	size of the POI area (or distribution of FCD)
	shape of the POI
	distance between origin and destination
Temporal	hourly trend
	weekly trend
	total number of stop points
User Profile	age, gender, preference

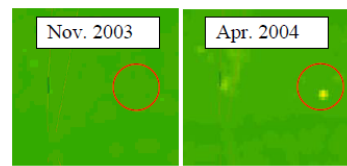
Evaluation by Real Data

2004 IIC taxi FCD in Nagoya



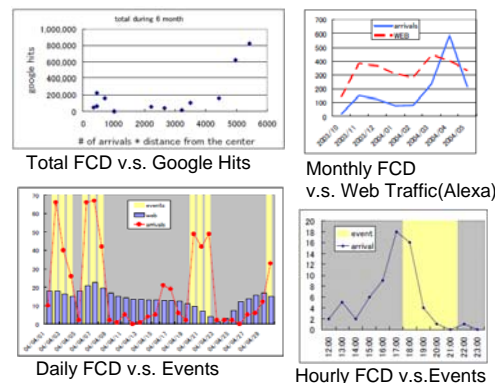
Result of Detection

Can the FCD be used for POI detection ?



Result of Rating

Can the FCD be used for POI rating ?



Result of POI Type Detection

Can 2 type of POI be distinguished only by FCD ?

* Classification test using 4 features
 * 19 hospitals and 19 leisure facility
 * 3 hold validation

	Accuracy
Decision Tree	86%
SVM	96%

Induced rules to classification on each feature

	Hospital	Leisure Facility
Number of Stop Points	Smaller	Larger
Average OD Distance	Shorter	Longer
Hourly Trend	Only morning	Morning to Evening
Weekly Trend	Tuesday	Friday and Sunday