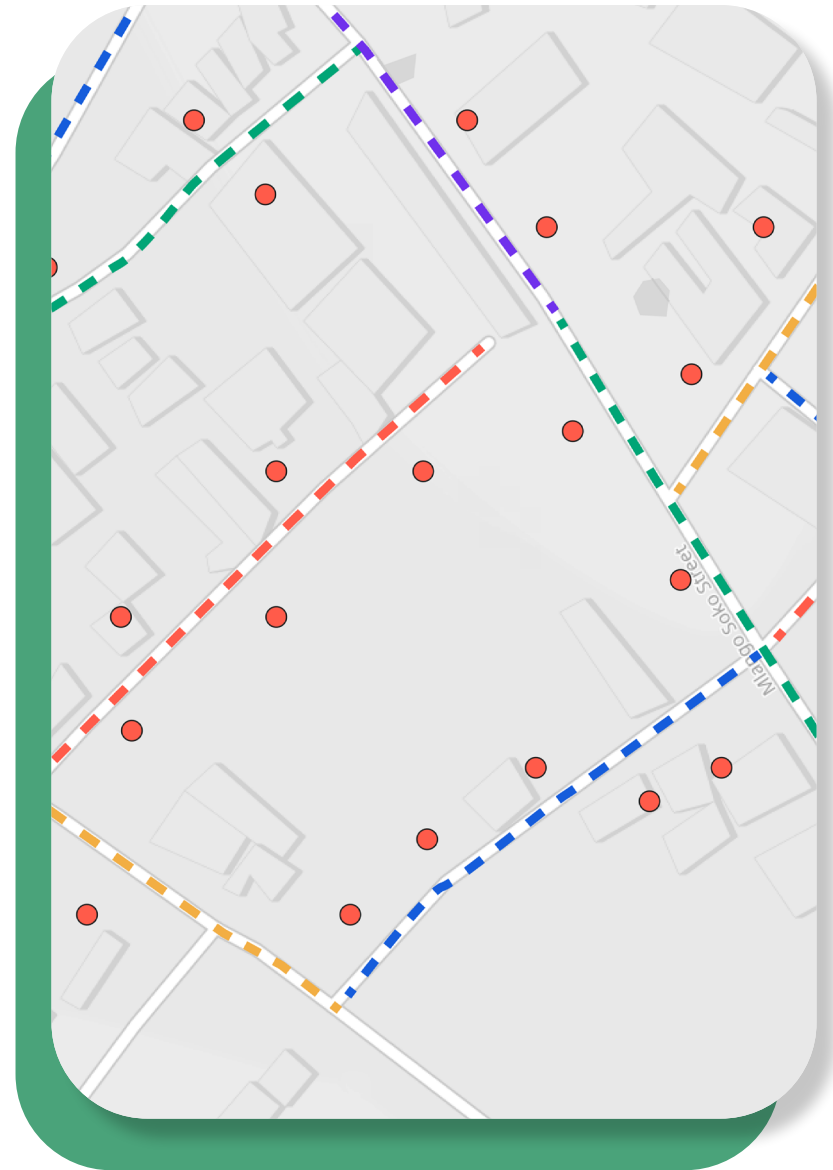# Premise

How To Do Points of Interest Mapping With Premise

How To Do Points of Interest Mapping With Premise

What is Points of Interest (POI) mapping?

POI mapping is the process of collecting spatially and temporally enriched data from observations taken in the real world and translating these observations into useful location-based information.

Whether you're a practitioner, researcher, or an enthusiast, the concept of mapping can be slippery and take on a number of diverse meanings. At Premise, we use the term "mapping" to convey the process of collecting this data from observations of the real world and translating it into useful location-based information.

Why use Premise for POI mapping?

- All data collected through Premise contains unique pairings of latitude and longitude, making all of it inherently spatial, even survey responses. Further setting Premise apart, your particular data gaps and needs will drive the design of the mapping tasks.

- Hyper-localized and up-to-date location data is invaluable to nearly all governance, development, and humanitarian interventions.

- Governance, development, and humanitarian interventions operate across multiple scales, therefore, tools must be designed to capture data at different spatial and temporal scales. The depth and breadth of Premise's Contributor networks allows for multiple mapping tasks to be run across different scales at one time.

- Context matters. Capturing Points of Interest (POI) specific to your project needs is essential to building sound monitoring and evaluation strategies and discovering more about Areas of Interest (AOI).

- By capturing greater richness about your AOI, you can build and maintain authoritative spatial datasets.

- Rich personal narratives from Premise's global Contributor network about POI (e.g. markets, border crossings, road networks, health facilities) enable better understanding of shared or divergent experiences with community place and spaces.

About Premise

Premise mobilizes a network of 5+ million global smartphone users ("Contributors") to source data in over 140 countries. Contributors are paid to take surveys and capture photos and videos. After passing through automated quality control checks, the data becomes available in the customer platform in near-real time, enabling quick analysis and identification of trends in sentiment.

How does Premise do POI mapping?

In order to meet the diverse needs of our customers, Premise offers four ways to conduct mapping tasks. Tasks can be defined by either geographic administrative divisions (e.g. departments or counties), specific places (e.g. a specific site), routes, or areas defined in other ways (e.g. a specific neighborhood or even a building).

From the most straightforward and resource-efficient approach of **Division-Based Tasks** to the more advanced **Place-Based**, **Route-Based**, and **Area-Based** tasking, Premise's mapping capabilities are designed to fit into a customer's unique needs and analytic workflow. Moreover, Premise's mapping capabilities complement one another, meaning that while you can employ these capabilities as individual tasks, they can also form the building blocks of a more robust solution.
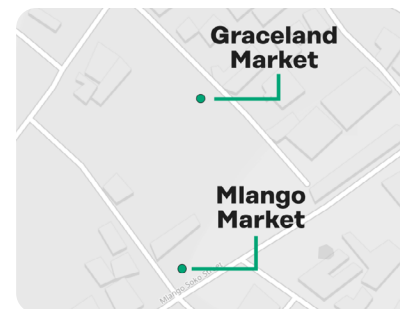
Premise Mapping Task Library
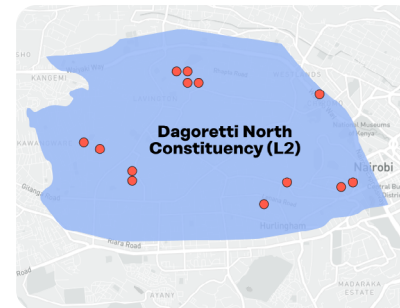
Division-Based
Self-directed observation task within a set geographic administrative division, e.g. "go to a market of your choosing within this county."
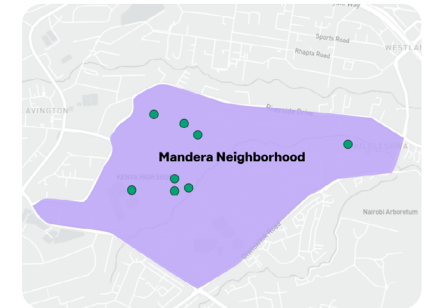
Area-Based
Directed observation task, e.g. "Please visit a market in this defined area."

Place-Based
Directed observation task, e.g."Please visit this specific market."

Route-Based
Directed observation task, e.g. "Please visit a market located along this defined route."

Division-Based Tasks

The most straightforward and resource-efficient approach to POI mapping with Premise are Division-Based Tasks.

Division-Based Tasks are designed to collect real-world observations, which can include location information (GPS-enabled "check-ins"), photographs, videos, and/or audio, of or from POIs determined by the customer's needs. While Division-Based Tasks allow Premise users to target data collection to [Administrative Levels 0-2](#), they are designed to give Contributors flexibility in identifying and completing tasks from a place of their own convenience and comfort.

Division-Based Tasks are optimal for customers whose projects are in the discovery phase, where location information about a particular POI topic is limited or unavailable entirely. Another common use of Division-Based Tasks for mapping is to capture atmospherics or to "read the pulse" of a community after an event that affects the AOI (e.g. assessing damage following a large-scale flooding event).

Division-Based Tasks can also rest as a foundational task in establishing more advanced mapping solutions, particularly when spatially-explicit data is not readily available. For instance, if you are interested in designing a market monitoring task to track price changes among several specific staple goods, you first need

price changes among several specific staple goods, you first need to know where these goods are stocked and generally available. Depending on the scale of interest, Division-Based Tasks provide an opportunity to efficiently tap Premise's Contributor network to establish a baseline points of sale POI dataset to then relaunch against for future monitoring activities.

In the case that you have location data obtained from web scraping, textual analysis, or any other source besides field visits, the data can be used as a starting point. A location dataset derived from secondary sources can be uploaded to Premise and any gaps or inaccuracies can be filled in with Division-Based Tasks. This is an efficient method as fewer places are needed to be mapped from scratch.

Administrative Units: L0 (Country), L1 (Region), L2 (District)

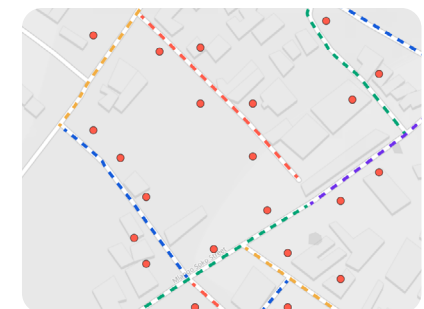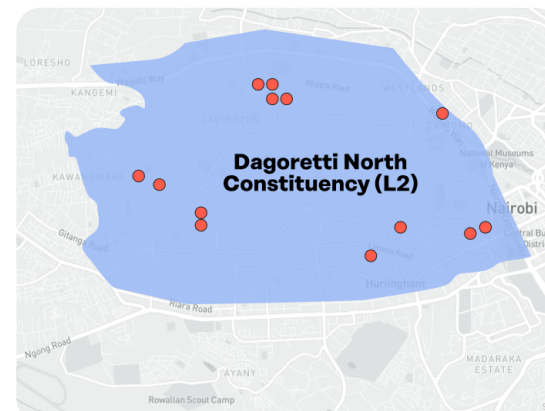**Division-Based Tasks**
Self-directed observation task within a specific administrative unit, e.g. "Go to a market of your choosing within Kent County."

Validate & Augment Tasks

Division-Based Tasks are an excellent and resource-efficient way to fill in blank spots on your map, but when it comes to launching tasks against existing location information, like known livestock markets or key transportation networks, you are going to have to turn to more advanced tasks, which we call Validate & Augment Tasks.

Like Division-Based Tasks, Validate & Augment Tasks are designed to collect real-world observations in the form of location information (GPS-enabled "check-ins"), photographs, videos, and audio from POIs. Unlike Division-Based Tasks, however, you define a specific search zone for a Contributor to visit and report on. Validate & Augment Tasks come in three distinct types, which follow the three specific spatial elements of points, lines, and polygons: 1) Place-Based Tasks; 2) Area-Based Tasks; 3) Route-Based Tasks.

Place-Based Tasks

Place-Based Tasks are designed with known geographic locations (latitude and longitude) representing specific places, e.g. a hospital or grocery store. With Place-Based Tasks, you will ask Premise Contributors to visit, record, and enrich details about a given place. If you have an existing POI location data for which you would like up-to-date observations, Premise can ingest your location data to launch tasks. If you do not currently have the data, but it is openly available elsewhere, Premise can pull this data. Given the variety of Premise's own syndicated data products, we can also pull from our own repository to define a dataset against which we can design and launch Place-Based Tasks.

Place-Based Tasks
Directed observation task, e.g. "Please visit this specific market [known location]."

User-defined Points of Interests
(POI) or Premise Global Index POI

Area-Based Tasks

Area-Based Tasks are very similar to Place-Based Tasks. The two task types differ in the geographic elements that define them. Where Place-Based Tasks are defined by points (known latitude/longitude pairs), Area-Based Tasks are designed with areal units, more commonly referred to as polygons, as the foundational geographic element. With Area-Based Tasks, you will ask Premise Contributors to visit, record, and enrich details on POI from a defined search area. More often than not, this area is smaller in areal units than Administrative Level 2 with no real defined minimal area. Like Place-Based Tasks, Premise can ingest your custom polygons. If you don't have them, the Premise Customer Success and Data Solutions teams can work to define polygons that meet your needs.

Depending on the needs of your project and/or size of your defined search areas, you may want to consider working with Premise's Data Solutions team to design a geographic sampling strategy for your Area-Based Task. Geographic sampling strategies can be used to segment your areal units (polygons) and, in time, ensure the sound distribution of approved Contributor submissions across the entire search area. While population is commonly used as a primary data input to geographic sampling strategies, the Premise Data Solutions team can work closely with your team to determine the best data inputs to inform your sampling strategy. At the very least, a geographic sampling strategy based on segmentation can ensure more uniform distribution of submissions over time.

Area-Based Task
Directed observation task, e.g. "Please visit a market in this defined area."
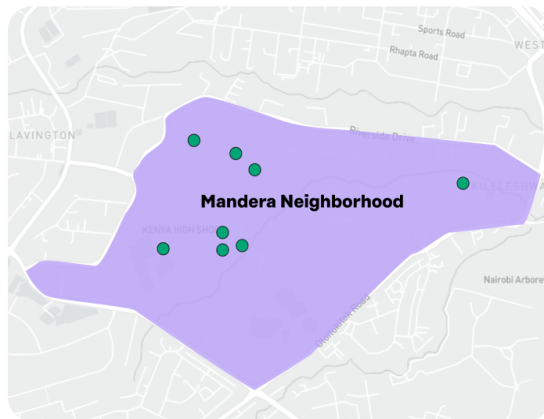
User-defined Area of Interest (AOI)

Geographic Sampling

0	1	3	2	1	1
0	4	6	6	6	5
3	6	6	6	3	0
0	1	5	4	0	0
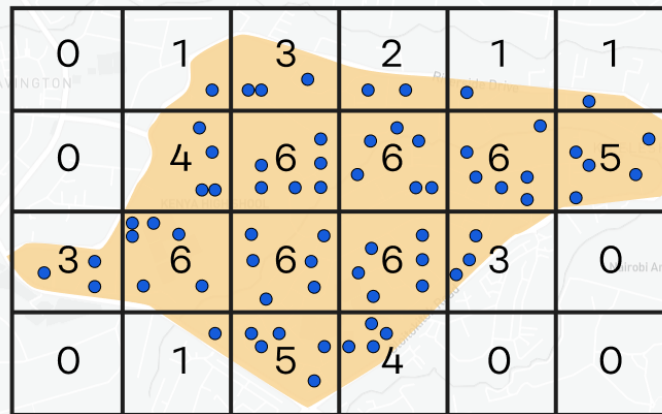
- Guarantees distribution of submissions by grid cells/hexbins

- Provides greater control over areas within broader AOIs

- Reduces concerns over duplicate submissions, e.g. market redundancies

- Distributes by AOI coverage (see example), population density, and/or features of interest, e.g. density of schools (User-derived)

- Can determine recurrence period (revisit) based on observation scale of interest

Route-Based Tasks

Route-Based Tasks are the third type of Validate & Augment tasks that Premise offers. Route-Based Tasks are designed with the geographic element of a polyline underpinning the task type. With Route-Based Tasks, you will ask Premise Contributors to record observations and their experiences along a determined route. Along this route, Contributors collect location information for specific POIs (e.g. potholes, store fronts), while simultaneously making other observations about their surrounding environment.

Road networks are commonly used datasets for Route-Based Tasks but are certainly not the only possibility. Given the importance of transect walks, particularly in ecological research, Route-Based Tasks could be used to collect specific observations from a given walking route. Likewise, traditional grazing networks or street-light accessible walking routes could be used to collect both qualitative and quantitative data about an individual's experience in a particular area of interest.

Depending on the mode of travel of interest, Route-Based Tasks require the most strategy in order to determine the best way to balance capturing important observational-based location information with the Contributor experience and expectations (e.g. route lengths, transportation costs).

User-defined routes or available route-based location data
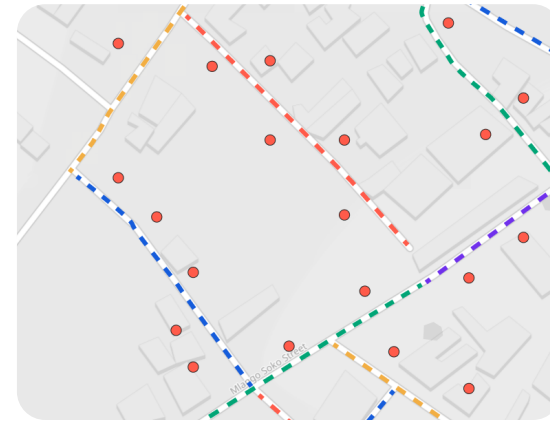
Route-Based Tasks
Directed observation task, e.g. "Please visit a market located along this defined route."

Learn More

Real-World Examples

Mapping Seasonal Livestock Markets

A development partner is evaluating programs to support livestock trade in the Democratic Republic of Congo. They are specifically interested in monitoring seasonal price fluctuations of specific cattle breeds at primary markets across a large region. This data will be combined with remotely sensed vegetation indices to derive an early warning livestock insurance program. Known market location data is not readily available.

Long Rainy Season Market POI

Dry Season Market POI

Long Rainy Season Market POI

Locate Task
Task designed for Contributors to collect location information for markets convenient to them that they use for a given season.

Place-Based Explore Task
Campaign level seasonal recurrences to collect observations of cattle breed pricing (weekly per season)

Seasonal recurrent monitoring of livestock market prices

Evaluating the Impact of Retail Optimization

A retail optimizer (SME) is active in an area of Nairobi, Kenya. A development institution supporting the SME wants to evaluate the impact of the SME by comparing pricing and availability in SME-serviced markets to markets unsupported by the SME.

AOI [Polygon] & Store POI [XY]

Data Processing

Place-Based Explore Task
Bi-weekly recurrence to collect observations of product pricing & availability

Area-Based Explore Task
Locating other markets within AOI

New Store POI [XY]

Place-Based Explore Task
Bi-weekly recurrence to collect observations of product pricing & availability

**Recurrent monitoring of SME-serviced & unsupported markets**

Human Settlement Mapping & Identification

An organization that derives human settlements from novel remote sensing and dynamic modeling approaches leverages Premise and our Contributor network to collect on-the-ground observations of unnamed settlements and document the name of settlements, administrative association to explore boundary disputes, healthcare accessibility, and more.
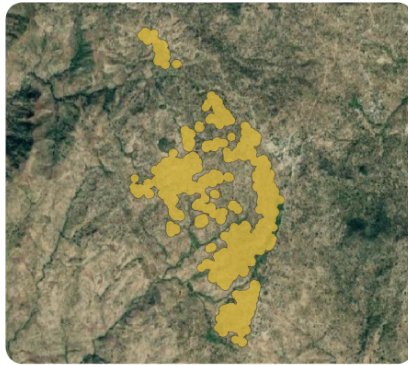
Settlement AOIs derived from remote sensing analysis

Data Processing

Premise Place-Based Explore Task
Task designed to ask Contributors to visit AOIs and provide attribution settlement and critical health infrastructure

Settlement Footprint

Bounding Box for Tasking
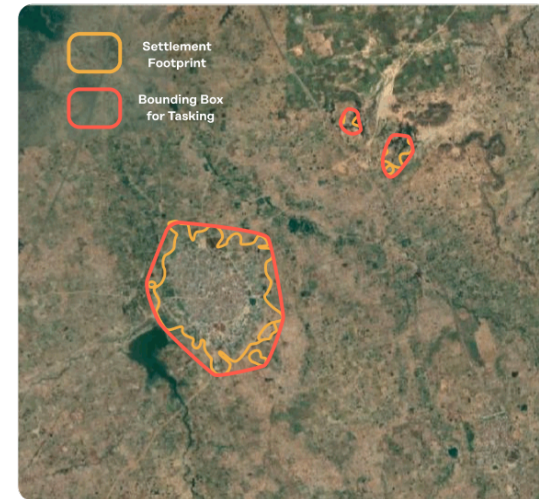
V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
batch_date	location_feature	location_feature	hrid	observation_lat	observation_lon	HASC_code	L0_name	L1_name	L2_name	this_task_will_a	checkin_start
2022-11-05	2604070	Gulf	johannesburg-sł	-26.181	28.064	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1812515,;
2022-11-05	2604070	Gulf	johannesburg-sł	-26.181	28.064	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604065	Checkers	johannesburg-sł	-26.273	28.029	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.2727049,;
2022-11-05	2604065	Checkers	johannesburg-sł	-26.273	28.029	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604083	Cambridge Fooc	johannesburg-sł	-26.185	28.049	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1845769,;
2022-11-05	2604083	Cambridge Fooc	johannesburg-sł	-26.186	28.049	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604084	Spar	johannesburg-sł	-26.189	28.049	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1882191,;
2022-11-05	2604084	Spar	johannesburg-sł	-26.189	28.049	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604092	Jk Supermarket	johannesburg-sł	-26.195	28.05	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1942755,;
2022-11-05	2604092	Jk Supermarket	johannesburg-sł	-26.197	28.05	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604063	Maysha	johannesburg-sł	-26.198	28.045	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1982424,;
2022-11-05	2604063	Maysha	johannesburg-sł	-26.198	28.045	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604036	Usave	johannesburg-sł	-26.201	28.043	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.2006197,;
2022-11-05	2604036	Usave	johannesburg-sł	-26.203	28.042	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604043	OK Foods	johannesburg-sł	-26.175	27.95	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.17482654
2022-11-05	2604043	OK Foods	johannesburg-sł	-26.175	27.95	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604097	Robot Wholesak	johannesburg-sł	-26.25	28.052	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.2497658,;
2022-11-05	2604097	Robot Wholesak	johannesburg-sł	-26.25	28.052	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		
2022-11-05	2604086	Dym Mini Marke	johannesburg-sł	-26.189	28.055	ZA.GT.JO	South Africa	Gauteng	City of Johannes	I understand, co	-26.1890561,;
2022-11-05	2604086	Dym Mini Marke	johannesburg-sł	-26.189	28.055	ZA.GT.JO	South Africa	Gauteng	City of Johannesburg		

Authoritative settlement records for planning and service delivery

Premise Points of Interest Mapping Options

	When to Use	Limitations
Division-Based Task	- Goal is to map POI across a large geographic area - Project is in discovery phase to determine feasibility of a more in-depth methodology or study - Need for a rapid audit of POI in an AOI that corresponds with Administrative Level 0, 1, or 2	- Limited control over submissions from same POI, meaning that duplicate submissions can occur - Constrained to Administrative Levels (L0, L1, L2) to target tasks - Contributors define stores of interest, which could be biased for a variety of reasons (ie., safety, convenience, preference)
Place-Based Task	- Known locations of specific POI are readily available - More control is required over the review and selection of POI to observe - No additional (ie., new) POI locations are required to build out the dataset geographically	- Discrete market information collected, which could limit inference to unknown and unvisited POI - More likely constraints based on Premise Contributor activities in the general AOI - Only known POI will be visited, meaning no net new POI

Premise Points of Interest Mapping Options

	When to Use	Limitations
Area-based Task	• Mapping locations across a neighborhood or generally defined geographic area • Individual market level monitoring is necessary but market locations are unknown • Observation of interest occurs at sub-L2 level or uniquely defined geography • The discovery of new POI within a self-defined geography is sought	• Limited control over submissions from same Point of Interest (POI) within AOI (duplicate Submissions can occur) • Recurrence set at user-defined AOI does not guarantee exact market returns
Route-based Task	• Phenomena and/or observation of interest occurs along or is restricted to a given route • Route-based location data is available or can be easily defined	• Route-based location data is unavailable or unreliable or challenging to define • Phenomena and/or observation of interest will occur indoors or not within proximity to identified route • Route lengths determined by Contributor experience, more so than customer need

Learn More

Premise

Premise is a crowdsourced insights company. Our technology mobilizes communities of global smartphone users to source actionable data in real-time, cost-effectively and with the visibility you need. In more than 125 countries and 37 languages, we find Data for Every Decision™.