MapsIndoors Implementation and Support

Classification	L2
Revision	1.04
Responsible	Solutions Engineering
Accountable	Head of Deployment
Consulted	Deployment, Solutions Engineering and Commercial Team Leads
Informed	Deployment, Solutions Engineering and Commercial Teams

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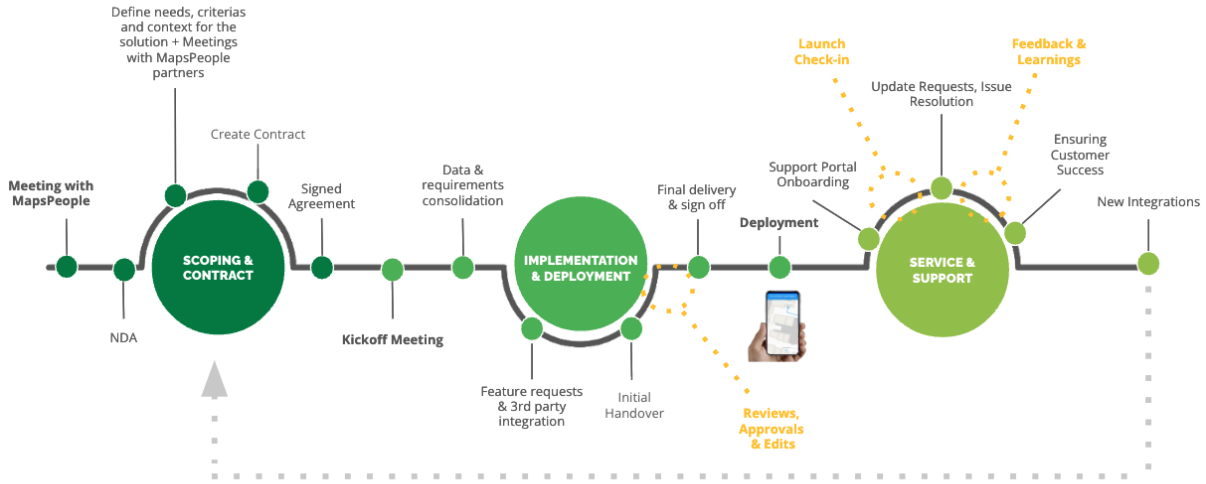
Purpose

This document outlines the typical process MapsPeople utilizes to implement and support MapsIndoors maps. In most cases, MapsPeople follows the process in the diagram below, but may follow a different process when the map requires. The process may be different when add-ons and integrations are in scope.



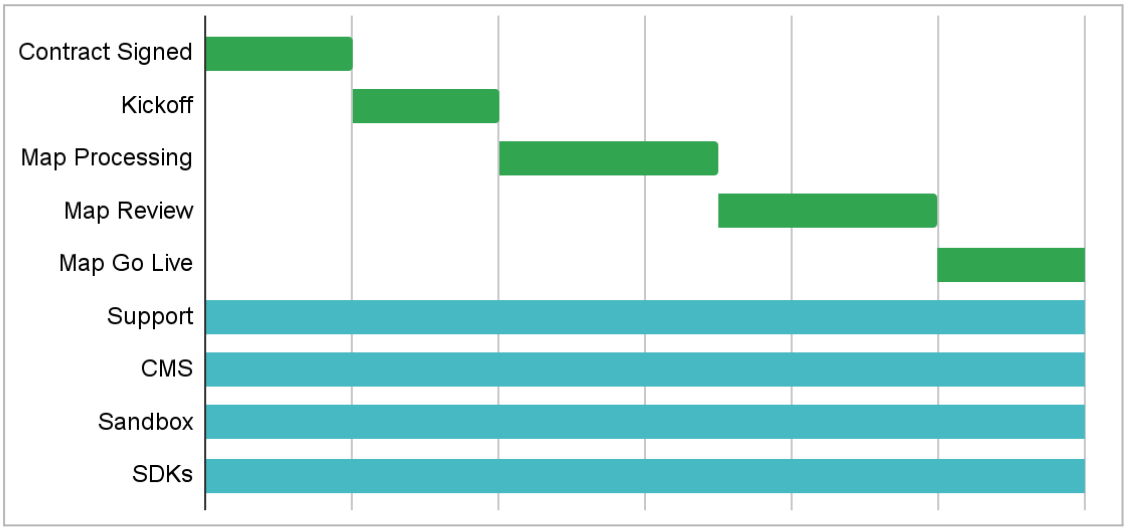
Glossary

The terminology underlined throughout this document is defined in the MapsPeople Glossary in greater detail.

Implementation

Implementation Overview

Implementation of a MapsIndoors map (the "map") depends on the map package purchased, complexity of the map design, and customer participation. The work on a map starts from the date of a signed agreement ("Sales Order"). Map creation usually includes several phases: kickoff, digitization (sometimes referred to as processing), review, and go live. An example map creation process is shown below.



The MapsIndoors Content Management System, sandbox environment (if applicable), and Software Development Kits (SDKs) are available near the time of a signed order form, as needed or found on the MapsIndoors documentation site.. A MapsPeople Customer Success Manager is assigned to oversee and coordinate the delivery of the map(s).

Typical Onboarding Activities

The table below shows a list of map creation activities and activity owners to achieve the desired map output.

Activity	Owner
Conduct kickoff call	MapsPeople / Customer
Grant Content Management System (CMS) access	MapsPeople
Provide SDK documentation and support	MapsPeople
Provide development sandbox	MapsPeople
Implement / integrate SDKs into Customer application(s)	Customer
Deliver floor plan drawings	Customer
Digitize buildings	MapsPeople
Hand over Map	MapsPeople / Customer
Review and accept Map	Customer
Deploy add-ons (optional)	MapsPeople/Customer
Deploy live data integrations (optional)	MapsPeople / Customer

Map Creation Process

Kickoff Process

Kickoff is the first step of map creation and the purpose of this step is to define the tasks and deliveries of the Customer and MapsPeople and the deadlines for these.

Typically, at the commencement of map creation, a MapsPeople Customer Success Manager and the customer will arrange an ongoing and regularly scheduled map creation status meeting. The Customer Success Manager will typically report status and progress accordingly via video web meetings. This may vary depending on the map and the customer.

MapsPeople and the Customer should make sure the right people are included in the map creation process, otherwise the map delivery may be delayed. The team members from MapsPeople and the Customer should be generally available during the map creation process and be able to answer requests for information, provide clarifications and feedback on all elements of the products to be delivered (the "Map") including but not limited to layout of the premises, building and floor plans, room and location data (categories, types, properties), floor order, areas not to digitize and restricted areas, design and graphical elements (branding guidelines, colors, iconography) and indoor positioning systems (if applicable) no later than the coming work day following the request.

During Kickoff and before initiating the Digitization process step, the Customer must collect aerial map showing the layout of the premises, all building and floor plans (CAD files), room data (id, name, properties), floor order, plans of areas not to digitize and restricted areas, design and graphical elements (branding guidelines, colors, iconography), list of categories and location types, pictures to add for locations (if needed) and deliver them to MapsPeople. This is the responsibility of the Customer.

Success of the Kickoff process is contingent on the customer providing:

- a list of buildings to be digitized with gross square footage per building and building address.
- 2D floor plan drawings (one per floor) with Room Names, Types, and IDs, clearly marked entrances and exits, and well defined layers (walls, doors, rooms, and furniture). MapsPeople prefers to work with CAD files, but other file types are accepted.
- which, if any, furniture should be included in the map. This must be provided with the floor plan drawings if it's to be included.
- which, if any, parking lots and land use should be digitized.
- additionally, the customer will:
- define which areas will not be digitized, if any. If this cannot be shown in the drawings, please provide documentation in a different format.
- define which areas will not need routing, if any (ex: rooms that students or staff will not need access to).
- up-to-date branding guidelines (e.g. map colors). If no guidelines are provided, MapsPeople will provide suggestions.
- custom icons (if MapsIndoors icon library will not be utilized) should be provided in the appropriate format (SVG 60x60 px).

- location images (if desired) should be provided in PNG format with an image size limit of 900x600px and less than 150kb.
- languages to be supported.

MapsPeople utilizes the cloud-based platform Monday.com for seamless map creation management, when necessary. In a dedicated customer workspace, MapsPeople handles map creation task intake and other map-related tasks. A customer team member will submit map-related details, such as building information and files, via the Monday Form. The platform also serves as a centralized hub for individual map creation communication, with the option to enable automatic notifications on map creation status changes.

MapsPeople will review the floor plan drawings provided by the customer. If the drawings do not adhere to the requirements specified in this document, the delivery will be delayed to accommodate for incomplete information. Additionally, if updated files, data, or design requirements are provided by the customer during the digitization process, this may also impact delivery.

If the Customer wishes for any reason to replace or amend the CAD files, the data, the agreed design or graphical elements or other material delivered, or if replacement and/or amendment is needed due to detected inconsistencies herein after the end of the Kickoff Phase this constitutes a change request entitling MapsPeople to freely revise the timeline and charge additional fees (a "Change Request") based on an estimate of additional fees.

Digitization Process

During the Digitization Phase MapsPeople processes the CAD files, preparing buildings, rooms, outdoor areas as well as defines indoor and outdoor routing networks.

Typically during the processing phase timely participation by MapsPeople and Customer team members is essential to maintain a steady progress.

Review Process

The Customer will be asked to complete a review of the map within a defined number of business days from the time MapsPeople makes the map available to the Customer (the "Review Period"). MapsPeople can provide a quality assurance checklist template to the Customer upon request. The The Customer shall review all elements and functionalities hereunder but not limited to:

- the accuracy and correctness of the mapping and all elements hereof,
- categories, location types and locations (completeness, icons, pictures and properties),
- indoor routes between buildings and rooms as well as outdoor to indoor routing,
- building entrances and exits, room doorways,
- design (colors) and graphical elements,
- kiosk locations (if Customer is setting up kiosks on their premises)

Note: Reviews of the map are typically done on the MapsIndoors demo platforms (Web App, Kiosk Web App, or Mobile App). Feedback on the MapsIndoors demo platforms is not in scope of the Review Phase.

Inconsistencies or errors in the map delivered compared to the Sales Order between the Customer and MapsPeople, and the data and material delivered by the Customer, must be reported by the Customer as a single set of corrections to the Customer Success Manager within the Review Period in order to expedite the review and delivery process. The MapsPeople Customer Success Manager will request written approval of the delivered map. The Customer is expected to respond to the written approval request within the time allocated by the Customer Success Manager. If the Customer does not reply to the written approval request and has made no requests for corrections during the Review Period, the map is deemed accepted.

Inconsistencies and errors solely caused by the acts or omissions of MapsPeople and which are reported within the Review Period shall be corrected by Mapspeople as a service free of charge. All other corrections and changes shall constitute a Change Request.

Once MapsPeople has performed corrections and made the map available to the Customer, the Customer must complete a second review of the map including the corrections made within 5 working business days from the time MapsPeople makes the map available to the Customer (the "Second Review Period"). The Customer shall be given no less than 2 working days notice by MapsPeople prior to initiating the Second Review Period.

If the Customer during the Second Review Period is of the opinion that the errors reported during the Review Period are not sufficiently corrected, the Customer shall report such remaining non-corrected inconsistencies or errors as a single set of corrections to the MapsPeople Customer Success Manager. The MapsPeople Customer Success Manager will request written approval of the delivered map. The Customer is expected to respond to the written approval request in the time allocated by the Customer Success Manager. If the Customer does not reply to the written approval request and has made no requests for corrections during the Second Review Period, the map is deemed accepted.

If the Customer has made requests for corrections during the Second Review Period, Mapspeople may summon the Customer to a meeting to discuss the corrections requested. MapsPeople shall perform the corrections which the Parties agree are outstanding after the Second Review Period. If, following the third performance of corrections by Mapspeople, the Customer maintains that the inconsistencies and errors still exist and MapsPeople, despite its desire to satisfy its Customers, deems it impossible to meet the requests of the Customer by reasonable means, MapsPeople may decide to terminate the Sales Order with no right to compensation for the Customer whatsoever.

Map Go Live

When the Review Process is completed the map is handed over to the Customer and is considered live. From here on the map through its lifetime is live. The Customer Success Manager remains the main point of contact at MapsPeople for the customer after the map is live..

During the Operations Phase the Customer may have access to annual updates of the map included in the MapsIndoors Subscription in accordance with the Sales Order based on amended data of the premises covered by the map such as changed building layout ("Updates"). Amended data of the premises must be sent as a single set of updates via the Moday.com Project Form.

The Updates shall be reviewed and possible corrections made in accordance with the rules and procedures described in the Review Process section above.

An update is considered an Update whether it affects all the premises covered by the map or not and whether it affects one or more sub-projects.

Multiple Maps

In certain situations, the Parties may agree that a map shall be split up into multiple maps e.g. several sites being implemented gradually and each being a separate map.

The Kick-Off process is performed in full only during the first map. In the following maps the Kick-Off process is reduced to the Customer delivering CAD files and room data to MapsPeople.

The Digitization process and the Review process are performed with the consequences of conclusion of these processes for each map hereunder that such additional map goes live.

Process Contingencies

Typical map delivery estimate is the time taken solely by MapsPeople to complete applicable activities and excludes any time delay caused by the or other third parties to provide requested information and/or action during and following each activity. Requested information means information MapsPeople requests of the Customer or applicable third parties to make decisions and/or to approve deliverable completion, where required or requested. MapsPeople will provide written notice (email is acceptable) whenever information and/or action is required of the Customer or applicable third parties in order for MapsPeople to resume services. Any delay by the customer or third parties stops the elapsed time toward the typical delivery estimate until such time that the necessary information and/or action is provided to MapsPeople so that MapsPeople may resume services.

Customer Integration

MapsPeople delivers the MapsIndoors platform as a set of Software Development Kits (SDKs), a Content Management System (CMS), and digitized maps. Use of the SDKs is essential to integrating MapsIndoors into a customer's native application.. For more detailed information about the SDKs, to view SDK documentation, understanding the MapsIndoors Integration API, or for more technical information about MapsIndoors, please visit MapsIndoors Documentation.

Typical Integration Checklist

- ☐ Digitized map from MapsPeople
- ☐ CMS access credentials tested and validated
- ☐ **Google Maps APIs and/or Mapbox APIs** enabled and associated API keys acquired
- ☐ MapsIndoors API key acquired
- ☐ MapsIndoors SDKs and associated documentation
- ☐ Appropriate dependencies identified and downloaded
- ☐ (if applicable) Integration API documentation reviewed
- ☐ (if applicable) Live data integration data shared to MapsPeople
- ☐ (if applicable) Live data integration platform setup and functional
- ☐ (if applicable) Indoor positioning system setup to manufacturer settings

Add Ons

Live Data Integrations

Two types of integration possibilities with MapsIndoors:

1) Integrations through MapsIndoors backend
2) Integrations that occur in the application code, or app-side

Live data integrations that are supported by MapsIndoors backend must be subscribed to by the Customer in order to receive functionality of these integrations within a MapsIndoors map. Real-time integrations are characterized by displaying data "live" on the map. Examples include showing the live position of a shuttle bus, current availability of a conference room, live occupancy data, and more. This data is not saved for long-term storage and only briefly cached to ensure performant delivery to the apps.

Booking integrations are characterized by data flowing in and out of MapsIndoors (read/write). MapsIndoors can interface with room booking providers to retrieve booking availability, show future availability for a room, and allow users to book a room from MapsIndoors for a specified time slot.

If included in the Sales Order, a MapsPeople Customer Success Manager will coordinate Customer with implementation of live data integrations during the project. It is the responsibility of the

Customer to ensure all third party systems are enabled and properly configured to be utilized by MapsIndoors.

App-side integrations are completely at the discretion of the Customer, with the exception of “Blue Dot” Indoor Positioning System integrations. All other app-side integrations require the Customer to develop the appropriate code to achieve desired outcomes.

Indoor Positioning Systems

MapsIndoors is an Indoor Navigation Platform that uses known-point navigation to route a user from an origin to a destination. In order to get a precise user position indoors (the "blue dot" experience), dynamic turn-by-turn routing, location-based advertising, etc., an Indoor Positioning System (IPS) should be implemented in the relevant building(s).

MapsPeople is IPS agnostic and seamlessly integrates with select providers. There are a range of different technologies to consider such as Beacons, WiFi, ultrasound etc.

IPS Provided by IndoorAtlas

If IPS provided by IndoorAtlas is included in the Sales Order, a MapsPeople Customer Success Manager will coordinate Customer implementation.

With IndoorAtlas, the user position is derived on the mobile device via the IndoorAtlas SDK, based on sensor fusion technology in conjunction with the detection of BLE beacons near the user.

Requirements for deployment

- MapsIndoors map must be digitized prior to deployment.
- A mobile application is required. Not supported in web-based applications.
- Customer’s application developer must include the IndoorAtlas SDK and bind it with the MapsIndoors SDK in order to utilize the system within the mobile application. Binding guidelines are available in the MapsIndoors documentation.

Customer is responsible for

- procuring beacons with the specified configuration.
- installing beacons based on a beacon placement map generated with IndoorAtlas and based on expert guidance from IndoorAtlas.
- ensuring all third party systems are enabled and properly configured to be utilized by MapsIndoors, including BLE enabled Wireless Access Points that will be used for indoor positioning.
- IndoorAtlas account setup and import of MapsIndoors map to IndoorAtlas.
- fingerprinting of all applicable floors. Fingerprinting is done via the Map Creator 2 app and requires a compatible Android phone. If the beacon locations (latitude, longitude, floor) are known, a virtual fingerprinting can be done if Customer provides the applicable information in a CSV file formatted to IndoorAtlas specifications.
- ground truth collection (regardless of fingerprinting method) of all applicable floors via the IndoorAtlas Positioning app.

If onsite services is included in the Sales Order,

- Customer must approve the beacon deployment plan and locations before beacons will be installed.
- Customer must provide physical access to all spaces where the system is to be deployed. This may require planning and an escort.
- IndoorAtlas is responsible for installing beacons.
- IndoorAtlas is responsible for ground truth collection and fingerprinting of all applicable floors via a fingerprinting and positioning app.

IPS Provided by Crowd Connected

If IPS provided by Crowd Connected is included in the Sales Order, a MapsPeople Customer Success Manager will coordinate Customer implementation.

With Crowd Connected, the user position is derived on the mobile device via the Crowd Connected Mobile SDK, based on the detection of BLE beacons near the user.

Requirements for deployment

- MapsIndoors map must be digitized prior to deployment.
- A mobile application is required. Not supported in web-based applications.
- Customer's application developer must include the Crowd Connected Mobile SDK and bind it with the MapsIndoors SDK in order to utilize the system within the mobile application.

Customer is responsible for

- procuring beacons with specified configuration (unless specified otherwise in the Sales Order).
- installing beacons based on a beacon placement map provided by Crowd Connected
- ensuring all third party systems are enabled and properly configured to be utilized by MapsIndoors, including BLE enabled Wireless Access Points that will be used for indoor positioning.
- Crowd Connected account setup and import of MapsIndoors map to Crowd Connected.
- plotting beacons and inputting beacon information into the Crowd Connected dashboard.

If onsite services is included in the Sales Order,

- Customer must approve the beacon deployment plan and locations before beacons will be installed.
- Customer must provide physical access to all spaces where the system is to be deployed. This may require planning and an escort.
- Crowd Connected is responsible for installing beacons.
- Crowd Connected is responsible for plotting beacons and inputting beacon information into the Crowd Connected dashboard.

Support

MapsPeople support covers map update and, technical support, Map updates include changes required to the map and/or additions to the map (such as new desks, floors, or buildings). Technical

support consists of support tickets, service level agreements, feature requests, and escalation process.

Customer contract will state the number of map updates MapsPeople will perform over a prescribed period. Additional map updates will follow the change control procedure. A map update is defined as a request or group of requests for changes to an existing MapsIndoors Venue within a Solution that must be performed by MapsPeople. Map updates include:

- moving, adding, or removing walls, doors, or furniture in an existing floor.
- adding a section or a new floor to an existing building that is included in contractually available space.
- outdoor design changes, including landscaping and parking areas.
- changing the base color of rooms.
- moving, adding, or deleting elements of the network/route graph.

The number of agreed map updates is included in the Sales Order. If not stated in the Sales Order, the default is one (1) map update per year. Additional updates will be done at a fixed price, defined in the Sales Order.

Map Update Procedure

Instructions for requesting a Map Update:

A request for map updates must be submitted to the MapsPeople Order Form and provide as much detail as possible including, but not limited to, screenshots with markings where changes are requested. Grouping multiple update requests into a batch submitted at the same time will be considered a single update request. The Sales Order will list the agreed upon number of map updates per year.

Technical Support

This section describes the support policies and procedures as well as escalation paths for different types of support tickets. Support tickets are the mechanism to formally communicate incidents that prevent the expected technical results of MapsPeople services. Support tickets, in the context of this document, are both internal and external incidents that relate to the internal production environment and our external services (e.g. MapsIndoors). Examples of incidents:

- Slow or unresponsive services and/or applications/network.
- Bugs or feature requests related to services, floor plan automation, APIs, SDKs and our own internal/external applications.

Support Ticket Process

The support ticket process is as follows:

1. Registration: Incidents must be registered through the MapsPeople support portal. Note: including screenshots or code snippets may result in faster investigation and resolution of a support ticket.

2. Assignment: Assigning the support ticket to a technical support team member. The assigning of tickets are based on: platform, severity (general SLA or customer specific SLA), region, customer and time of day.
3. Investigation: The assignee investigates the incident to determine the root cause of the problem and the platforms and/or applications affected. During the investigation phase, communication with the reporter of the issue (e.g. request for additional information) must be made through the support portal.
4. Resolution: Depending on the severity of the issue, the root cause and the platform, the assignee can require additional participants to assist in resolving the issue. When the problem is fixed and verified, the incident can be marked as resolved. During the resolution phase communication internally and externally must be made through the support portal.
5. Closing: The incident is categorized and if there are any critical takeaways they are communicated to the teams involved and/or affected.

Service Level Agreements

In general MapsPeople has two service level agreements in place: one for Europe and the rest of the World and one for the United States of America.

The organization submitting a support ticket may have a customer specific service level agreement, which shall be defined in the Sales Order if applicable. When triaging a support ticket, the handler of the incoming support ticket will ensure the customer specific SLAs are communicated to the assignee. To ensure this is possible, customers submitting support tickets should include their customer name and solution ID, as to allow the handler of the ticket to properly identify customer specific SLAs.

Tiering model

Incidents are divided into three tiers:

Tier	Description
Tier 1	Simple issues that can be solved by linking to the documentation, a guide or a knowledge base article.
Tier 2	Tier 2 incidents are questions and issues that cannot be resolved by linking to the documentation pages. Examples of tier 2 issues are: ● How to implement MapsPeople products in special cases (e.g. using React Native framework), ● Assist in bug fixing client and partner code. ● Edits to maps and MapsIndoors solutions. ● Special assistance related to implementing or managing Google products in a clients' or partners' product or organization. If a support ticket cannot be resolved by the technical support team it must be elevated to a tier 3 issue. Before requesting participants to assist in fixing the issue, the support team should be able to replicate the issue.
Tier 3	Tier 3 support tickets require participants from other departments and teams. Examples of tier 3 issues are: ● Incidents related to the low level services on GCP. ● Bug reports that require fixes in the platform backend, APIs and SDKs, CMS and standard apps and kiosks and therefore must be assigned to one or more of the development teams. ● Updates to maps (e.g. new buildings, altered layout of rooms, etc.). ● Feature requests (see below). ● Issues related to integrations that we do not fully control (e.g. IPS).

Feature Requests

Feature requests are to be handled by the product management team and can be requested on the product roadmap webpage. Once handed over to the team, the support issue can be transitioned to the state "Pending". Support tickets handed over to the product management team can be closed when they are either released, rejected or have no ETA for implementation.

Escalation

In the event that a support ticket response is unsatisfactory or does not meet SLAs, the customer may follow the escalation path determined by contract to escalate the issue.

Map Unit of Measure

The Sales Order defines the unit of measure used to calculate the size and scope of a map. When the scope of a map changes to increase the size beyond the current defined unit of measure, a new Sales Order shall be required. The Sales Order definition of map unit of measurement takes precedence over any method described in this document.

Map Area

Map area is determined by the space to be mapped and may be used as a map unit of measure. If appropriate, other considerations of the space may be applied and included in the map area calculation, depending on the scope and usage of the space. Typically, the map area includes usable indoor space, but may also include outdoor space if the outdoor space is in scope. This is calculated in square feet or square meters, as appropriate.

Buildings

Units of measure for buildings are considered indoor spaces that are 500,000 square feet / 50,000 square meters, meaning 500,000 square feet / 50,000 square meters space or less is one (1) building unit of measure. Larger buildings are counted in 500,000 square feet / 50,000 square meters increments. Example: a 1,250,000 square feet / 125,000 square meters building would count as three (3) building units of measure.

Change Log

Revision	Change Log
1.00	Initial version of the document.
1.01	Updated to current template - no content changed.
1.02	Minor edits for consistency and alignment between documents. SLA links updated. Added table of contents. Updated to new template.
1.03	Added Monday.com information Changed references from Project Manager to Customer Success Manager Minor changes to language about how to request map updates Minor changes throughout
1.04	Major revision of map references throughout Order form add-ons updated with more specific information