

ASSIST Software | Innovation

Industry-disruptive Solutions

At the forefront of our country's endeavors of being one of the major providers of bespoke software development services, ASSIST Software has always been recognized as **one of the most innovative companies**. We have used our broad technical expertise and adaptive collaboration to build products that provided our partners with **industry-transforming capabilities**.

Since our inception in 1992, we have delivered **disruptive solutions** to over 300 international clients across multiple industries such as energy, manufacturing, medical, education, entertainment, or military. Moreover, we also have a history of **adding business value** to our clients by suggesting improvement ideas through new use cases or even complete rethinks with expansion possibilities beyond original scope.

We take pride in our **innovative side**, so if you have a revolutionary idea and want to transform it into a real product, **partner with us!**

assist-software.net

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Creating the platform to enable increased medication adherence through distributed and innovative IoT cloud connected devices

- Expertise**
Data analysis, Custom software development
- Platforms**
Web, Mobile, Cloud
- Deliverables**
Cloud platform, Mobile APIs, Web application
- Project Type**
Dedicated Team

CLIENT

HealthBeacon Ltd healthbeacon.com

Ireland, US e-Health 50 employees

Specialties

Digital health, pharmaceutical, IoT, managing medication, smart medical devices

Description

Healthbeacon Limited operates as a medication adherence technology company. The Company develops tools for managing medication, as well as provides customized reminders to help you start and stay on track with your medication.

Engagement duration **6 years+** Projects with ASSIST **5** ASSIST team size **up to 10**

FEATURES WE DEVELOPED

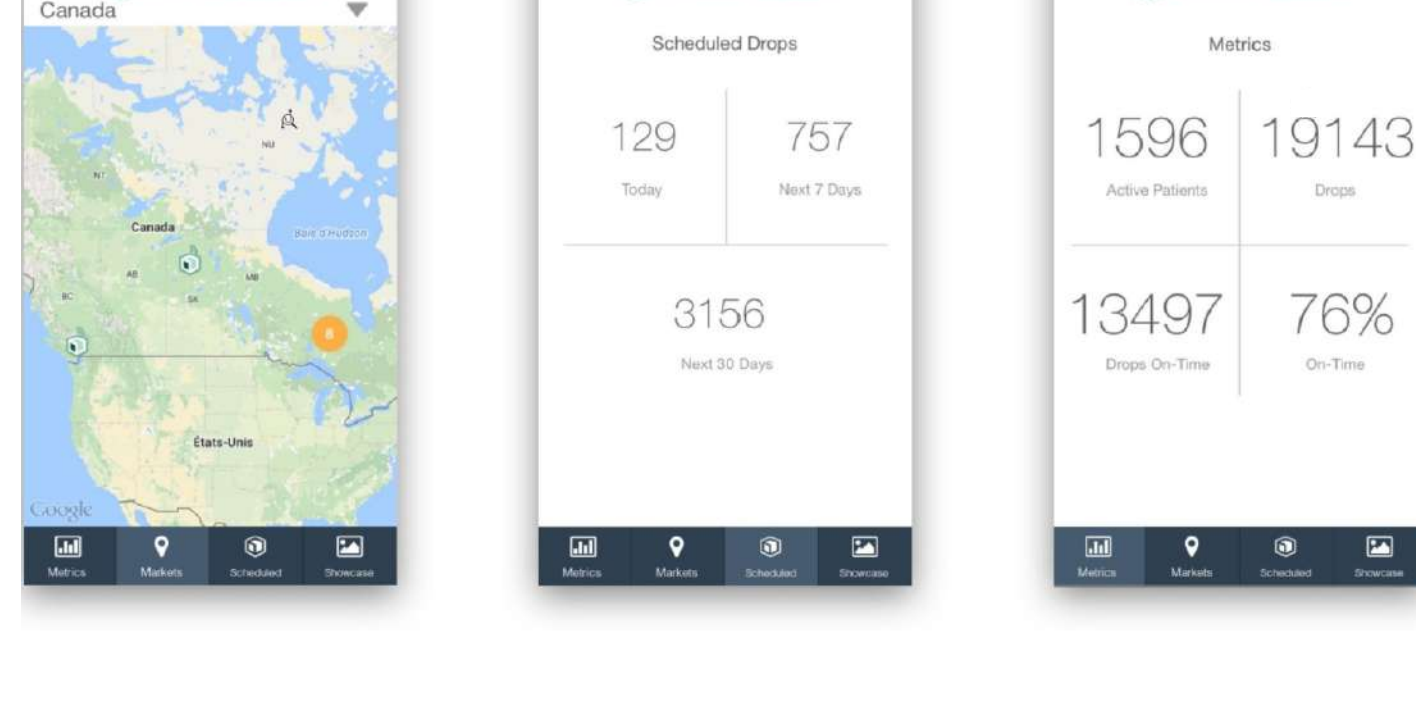
- SMS integration
- Analytics
- Cloud platform
- OTA updates
- ML implementation
- Data privacy
- GDPR compliance
- Data management
- IoT connectivity
- Big Data analysis
- Database system

TECHNOLOGIES WE USED



PROBLEM

The global challenge to address the unsustainable increase in healthcare spending added to a growing and aging population drives the need to change how healthcare can be delivered. Modern life makes it hard to **establish and maintain routines**. Clinical studies have demonstrated that only 50-70% of global patients adhere properly to prescribed drug therapy. Moreover, one of the most specific problematic areas is around patients dependent on self-injecting medicines. This 40bn, fastest-growing market segment needs **solutions to address poor adherence** leading to wasted medicine and poor patient outcomes.



SOFTWARE SOLUTION

HealthBeacon is a smart sharps bin (IoT device) for patients who self-inject medications at home. It is **digitally connected** and programmed with your patients' personal medication schedule, using **custom** reminders to help them start and stay on track.

ASSIST started the collaboration with HealthBeacon in 2014 and has designed and implemented from scratch the cloud infrastructure, the web and mobile apps APIs.

ASSIST has architected the cloud infrastructure using AWS. The IoT devices are connected via a **3G Vodafone** private network to the cloud platform where the data is collected and analysed using the web and mobile dashboards.

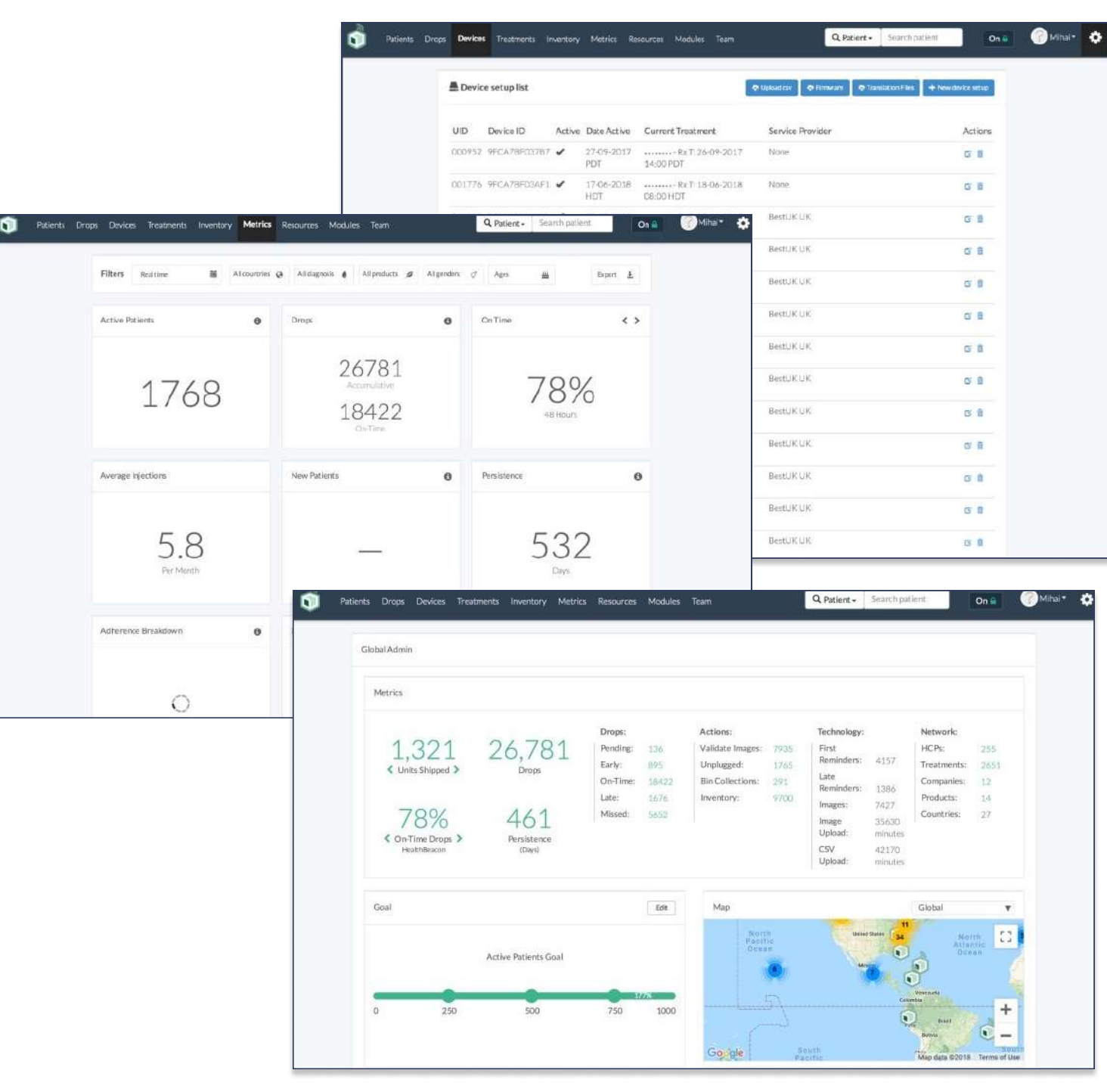
The entire system has been recently approved by the **FDA** in the US and the data management is **HIPAA HITECH** ready and **GDPR** compliant. The infrastructure has successfully passed external security audits as well.

We used **IBM Watson** to implement a machine learning algorithm which would detect different types of medication introduced in the bin. The mobile application was built in Android using our APIs and the web dashboards are built in Django, Python.

The cloud implementation uses Load Balancers, Cloudfront etc. and the dashboard also facilitates Over the Air (**OTA**) firmware upgrades.

FEATURES

As well as processing data received daily from the devices, the platform offers the following benefits:



- Communication** between system and device – when the device sends data, the system responds back to the device monitor according to the calculations.
- User management** – the platform can be accessed by multiple user types and each has customizable permissions.
- Patient and treatment management** – patients can be tracked and ensure that the patient is adherent to their treatment.
- Injections management** – when drop data is received, injections are categorized and verified with image recognition using a Machine Learning service.
- Reminders** – the system sends scheduled emails and SMS messages to patients to remind them to take their medication.
- Analysis and reports** – the platform aggregates the data offering various filters and the possibility to export the data in multiple formats, such as PDF, PPT or Excel.
- API for Mobile App** – API provide access to mobile devices to cloud services and notifications for business metrics.

INTEGRATIONS

- Vodafone private B2B network integration with AWS cloud
- AbbVie Hub Portal (passed AbbVie QA process – SQA)
- Teva Salesforce
- SAP Uniphair
- Twilio – Communication APIs for SMS, Voice, Video & Authentication

COMPLIANCE

- ISO 9001
- ISO 27001
- ISO 14001
- HIPAA / HITECH ready
- GDPR certified
- SQA Compliance



BUSINESS RELATIONSHIP

EVOLVING AN IDEA INTO A SUCCESSFUL PRODUCT

HealthBeacon came to us with the device and an idea and we architected the infrastructure, for the product to become **reality**.

What started as a work-package based collaboration, evolved into **full product ownership** as new features were always being added. Our relationship with the client also developed – as their team increased exponentially, we were now mentoring people with various backgrounds on technologies used.

HOW WE DEALT WITH CHALLENGES

Although successful, this brought challenges as well: the impact of the numerous modules and integrations, working with other external teams, client's team structure constantly changing meant we had to show **flexibility**.

Data sync with external services was the main technical challenge, solved through extensive research and effective communication. SQA process also involved a high amount of documentation and **attention to detail**.

SHARING SUCCESS

We adapted by offering clear explanations of technical choices and the client was able to take prompt decisions, so the progress was constant.

An ongoing 6 years+ collaboration with a client will always involve changes and their equivalent challenges, but **effective communication and adaptability** can help progress through the road to product maturity and many successful project phases, to a point where the partnership involves promoting each other's services and products.

PROJECT HIGHLIGHTS & ACHIEVEMENTS

- 100k+ devices supported worldwide.
- Secure, ensures privacy and highly compliant
- Patients are more adherent – 80 to 90% compliance when medicines are connected
- Fast, two-way communication
- Improved patient outcomes
- The Irish Times Innovation Awards 2017



TESTIMONIAL

Adrian Burns
CEO

Firmware, Secure IoT Solutions

ASSIST have done a great job for us and they are really a very experienced software design company covering everything from UI to Cloud backend to data storage to data visualisation and beyond.

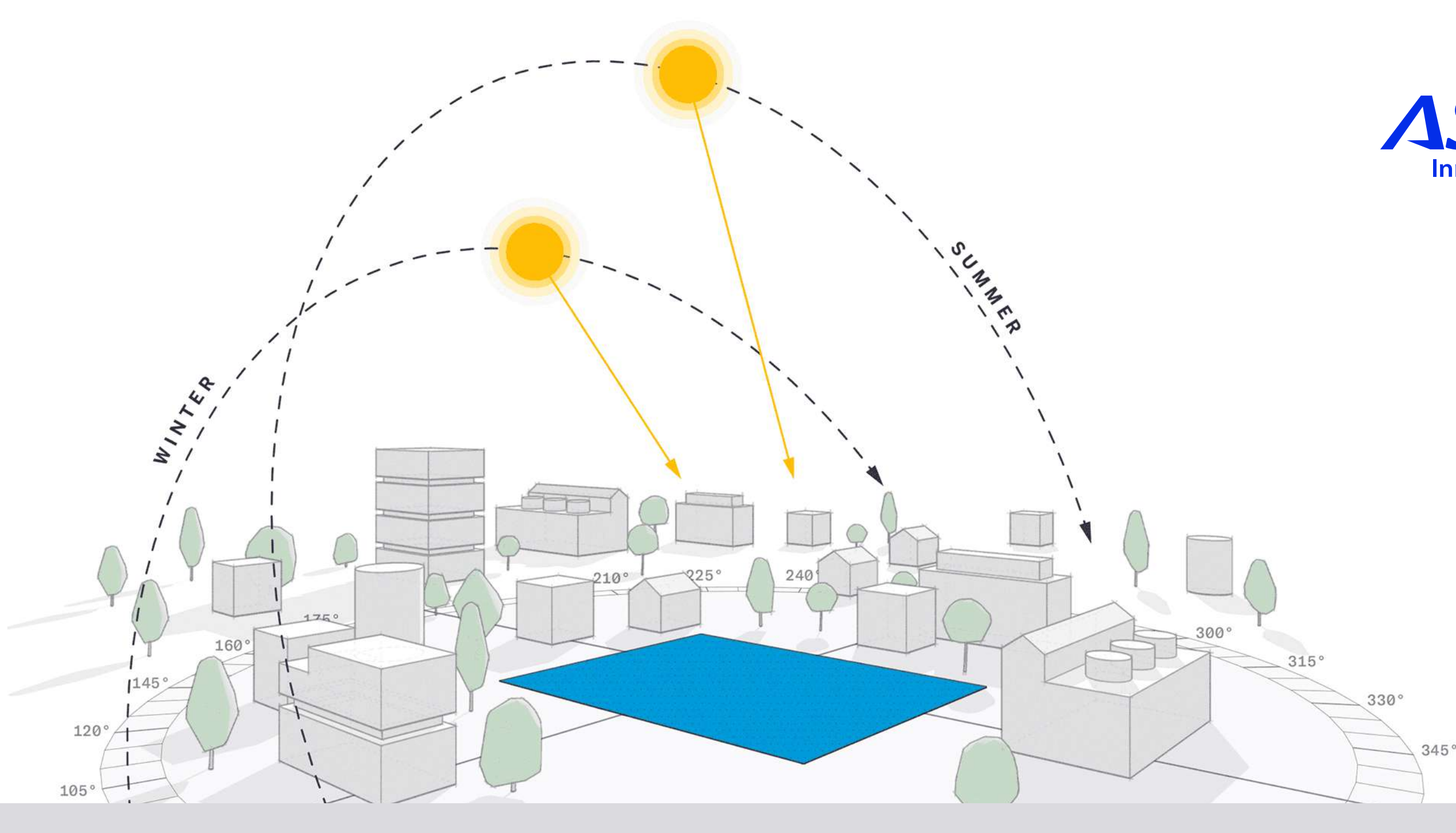
NEXT CHALLENGES

- Multi Continent Presence (Europe, Americas, Asia-Pacific)
- Switch to warehouse database
- Support of devices to be deployed as part of FDA approval
- Support the pharmaceutical industry in mirroring the digital approach to resolve key issues through mobile applications, connected platforms or SaaS models.



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Developing market-leading products that empower designers and architects with insight on energy saving analysis for enhanced building performance



Expertise

Back-end, Front-end, DevOps, Maintenance



Platforms

Web, Cloud, SketchUp



Deliverables

Web apps, Custom orchestrator Tool



Project Type

Team Augmentation

CLIENT

Trimble Inc. trimble.com
USA Building & Construction/ Utilities 11500 employees

Specialties

Agriculture, Building & Construction, Geospatial, Natural Resources and Utilities, Governments, Transportation

Description

Trimble is transforming the way the world works by delivering products and services that connect the physical and digital worlds. Core technologies in positioning, modeling, connectivity and data analytics enable customers to improve productivity, quality, safety, and sustainability.

Engagement duration **7 years+** Projects with ASSIST **2** ASSIST team size **up to 15**

FEATURES WE DEVELOPED

Custom Orchestrator Tool

Integrations

Plugins

Cloud platform

Front-end

Newsletter system

Web apps

Website development

Microservices

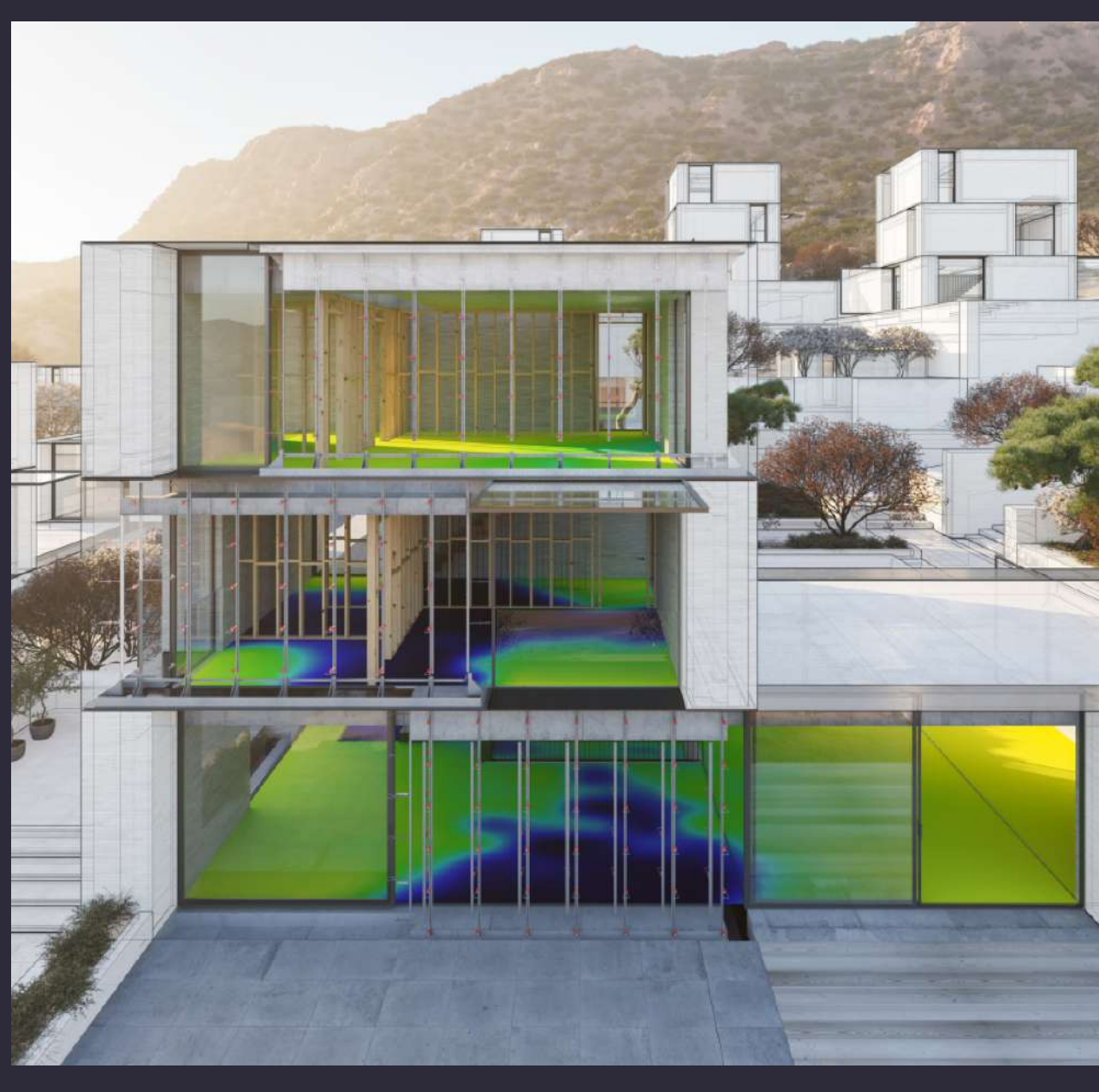
Analysis

Responsive Design

Back-end

TECHNOLOGIES WE USED

ANGULAR Scala Java node.js AWS python AWS Lambda TypeScript docker HubSpot appium



ASSIST – TRIMBLE PARTNERSHIP

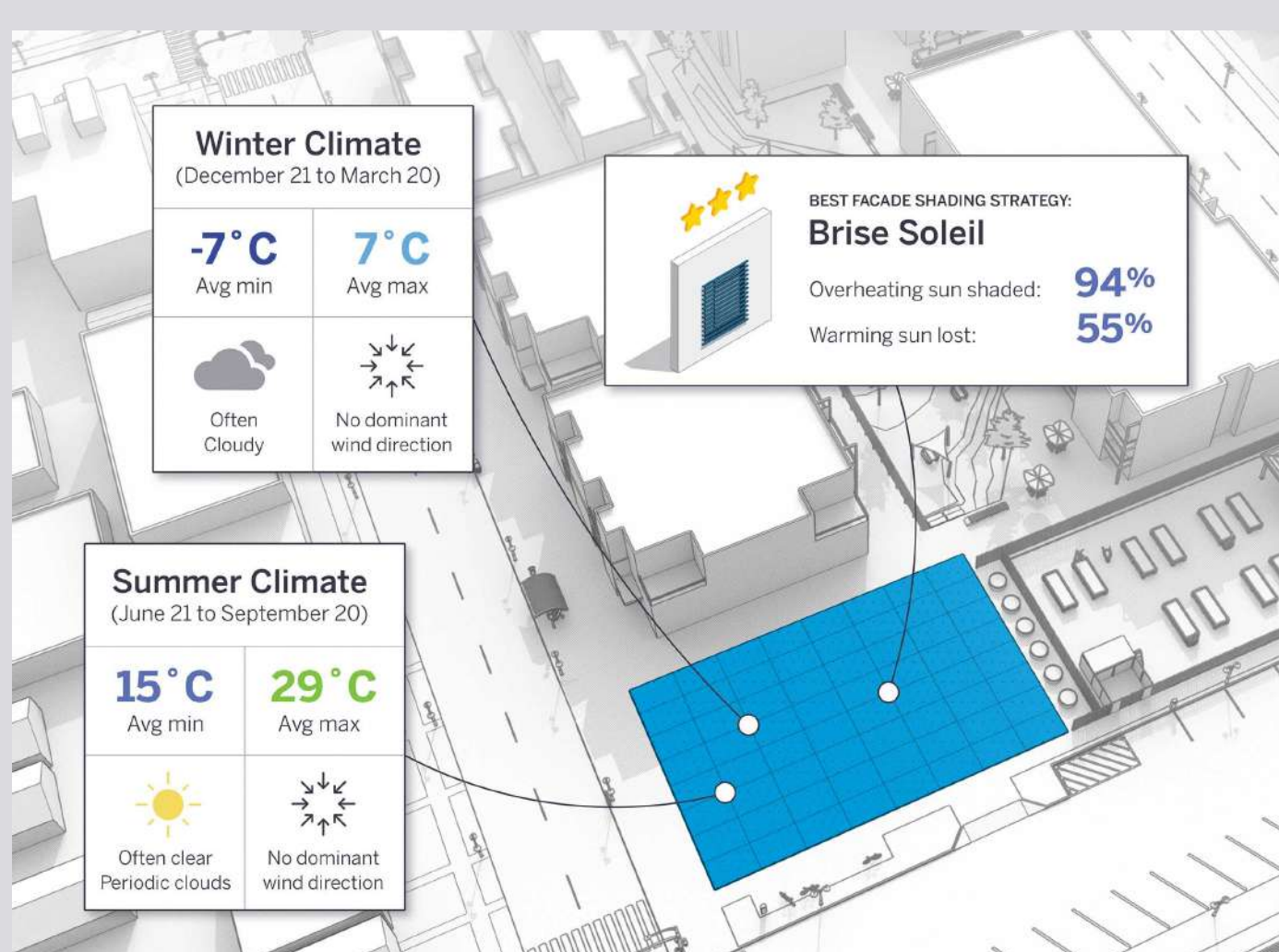
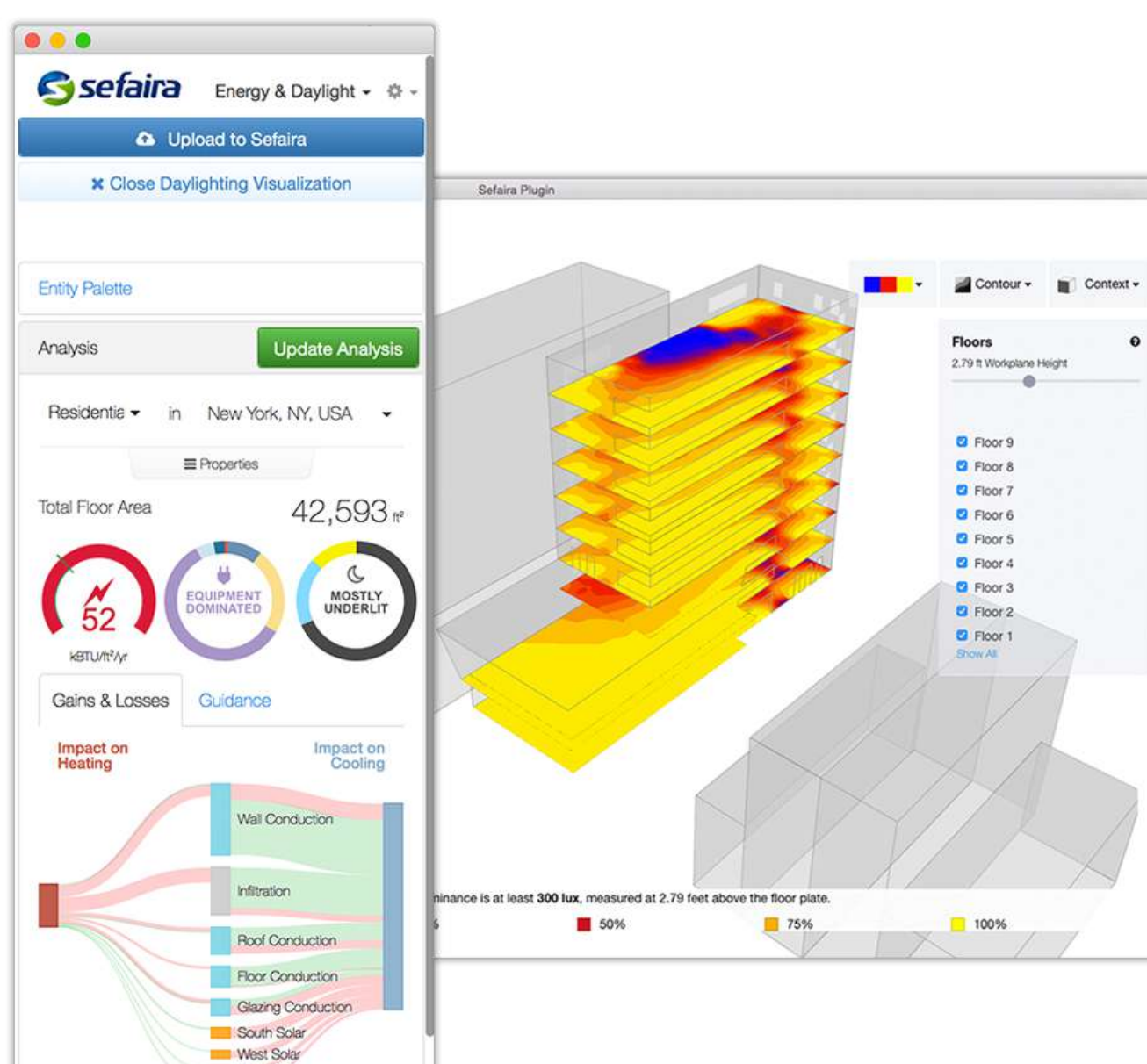
ASSIST Software has been working on the Sefaira product since 2014 by augmenting the clients' development teams in New York & London, through **joint development flows and Agile ceremonies**.

Following the acquisition of Sefaira Ltd. by Trimble Inc. in 2016, ASSIST continued the relationship with further assignments including the development of **SketchUp PreDesign, maintenance and DevOps**.

SEFAIRA

Sefaira is a product integrated in SketchUp and Revit 3D modeling software. It enables architects and engineers to design green, energy-efficient buildings. The entire solution is based on a certified energy simulation engine. ASSIST has been involved in architecting and developing various **microservices**, the main one being for the Populous system – an application for **user and entitlements management**.

The AWS solution provided by ASSIST brings numerous advantages like: on-demand delivery of IT resources, pay-as-you-go pricing, no upfront investment, low ongoing cost, flexible capacity, speed & agility and global reach. It also allows the team to **focus on projects that differentiate the business**, not on the infrastructure.



TECHNICAL CHALLENGE

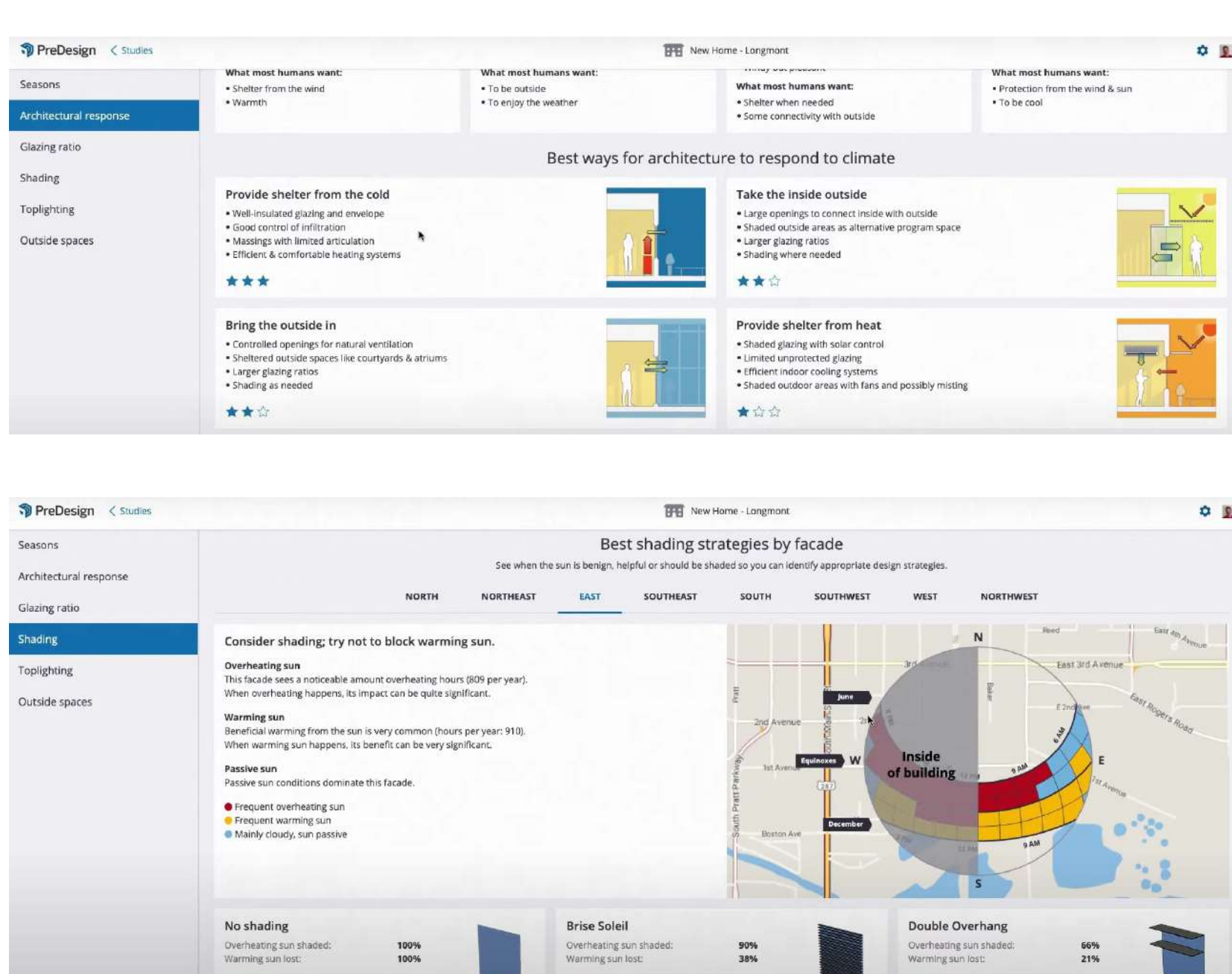
We architected a **complex orchestrator** using docker containers which enables developers to spin up development and testing environments quickly and easily. This Stackman tool is also used for managing the entire **platform of microservices**.

Another technical challenge involved was **synchronizing** the old entitlements management system with the newly integrated one, which combined multiple functions into one – this required **extensive testing** and continuous planning.

PREDESIGN

PreDesign is a software product that provides insight and guidance on climate and environmental constraints and opportunities to designers of buildings and outside spaces. It outlines how the climate will affect the design along with the most effective solutions.

The **technical implementation** was done almost entirely by ASSIST, with the business logic and product design provided by Trimble.

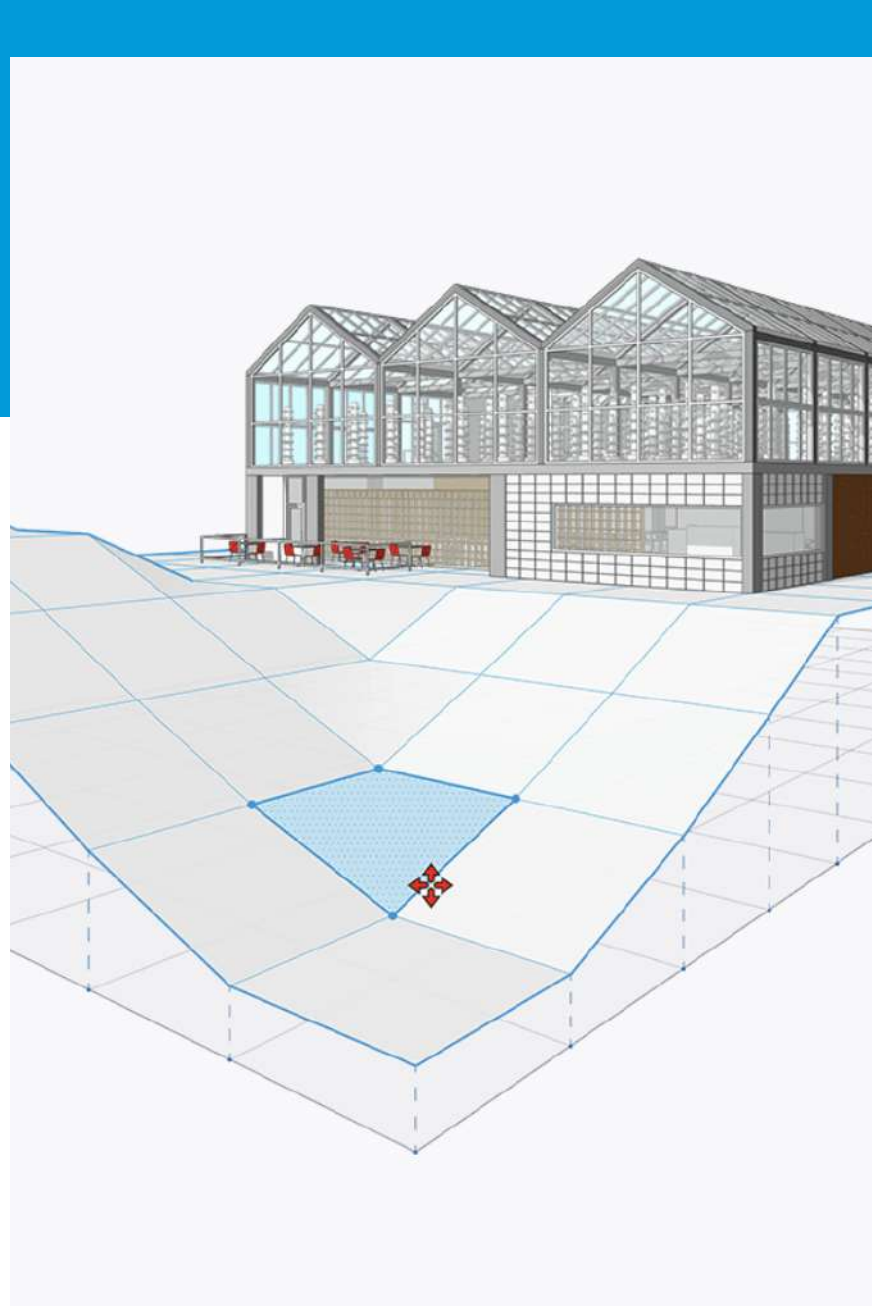


TESTIMONIAL

Annette Burgard
VP OF MARKETING
SEFAIRA

ASSIST has been a highly valued partner of Sefaira for several years. The team developed our corporate website and is also working with us on creating a support infrastructure for our customers.

HIGHLIGHT FEATURES



Easily access and apply the right site and climate insights to **avoid** later **rework**.

Make thoughtful design decisions based on **data** provided directly through the app.

Enhanced design narrative and gain client approval quicker by collating relevant **performance graphics**.

Generates **visualisations** that users need to present to stakeholders.

SUCCESSFUL BUSINESS OBJECTIVES

Add value, save time & **optimize costs** by suggesting innovative approaches.

Have a single **integrated system** for user management, licenses, and companies.

Spin up development and testing environments easily, with **no specialized DevOps intervention**.

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Building the integrations for a market-leading product used on a global scale for managing personalized experiences



Expertise

Frontend, Backend, Middleware Integration, Mobile Development, Salesforce Development



Platforms

Web, Cloud, Android



Deliverables

Custom integrations, Widgets, AWS Lambda Apps, Android app



Project Type

Dedicated team

CLIENT

JRNI Ltd. / formerly BookingBug jrni.com
United Kingdom Enterprise Software 101 – 150 employees

Specialties

Retail Technology, Scheduling, Business profitability, Customer relationship

Description

JRNI is the market leading appointment scheduling, queuing and event management platform. JRNI combines a customer engagement platform with applications – Events, Appointments, Queuing, Insights, Call Center – that put omnichannel conversion at the heart of business.

Engagement duration 5 years+ Projects with ASSIST 1 ASSIST team size up to 15

FEATURES WE DEVELOPED

Calendar Integrations

Personalized widgets

PDF Manager

Salesforce integration

Outlook, iCal, Google Calendar support

ISV Salesforce org

Shopify Liquid templates

Zoho integration

TECHNOLOGIES WE USED



PARTNERSHIP OVERVIEW

JRNI is a SaaS platform for scheduling and managing personalized **experiences at enterprise scale**. It optimizes client journeys, increasing revenues and customer loyalty. We started by joining their back-end team and worked on **maintaining** the platform and **adding new features**.

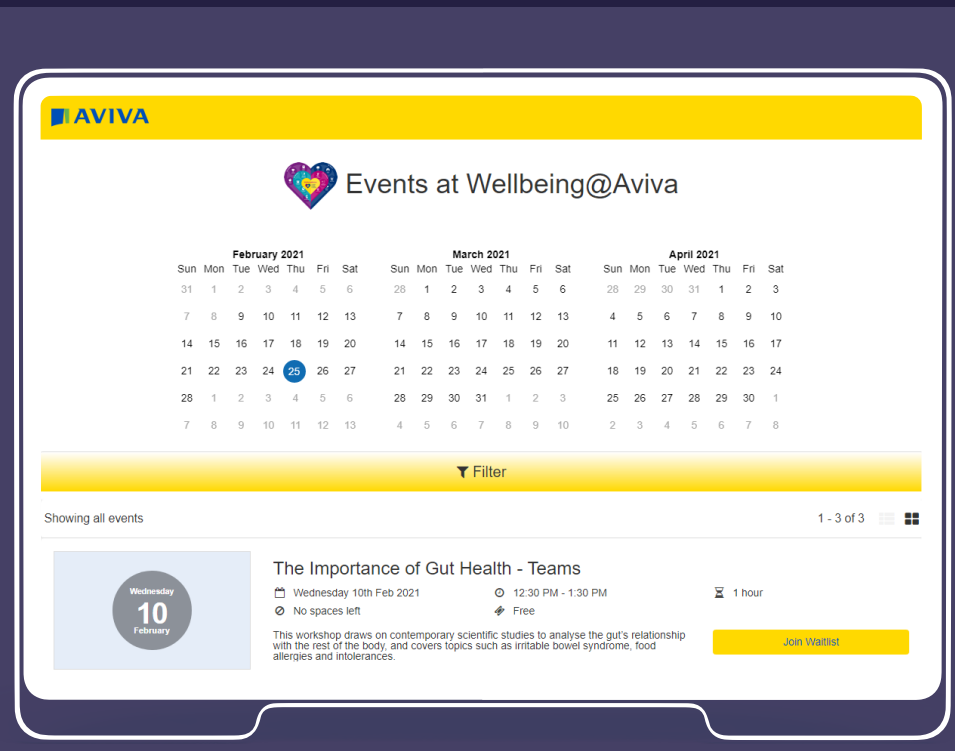
Using Amazon web services, JRNI is built to be quickly and easily **extensible** to new requirements. Our developers provided **support** for clients who wanted to use individualized objects for integration, specialized code, flows, or processes and we created **specific Lambda apps**.

We showed great **adaptability** by merging seamlessly with the JRNI internal team. This was in part due to our experience in offering **team-augmentation** services along the years, as well as our developers being regularly used to learning new skills and frameworks in a short time.

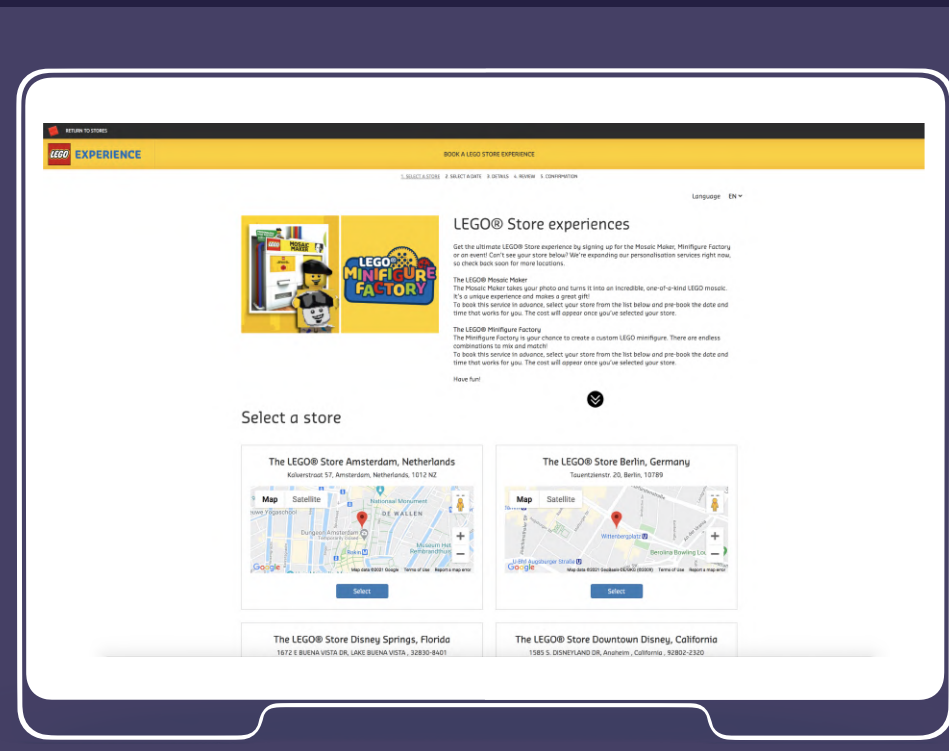
CLIENTS WE'VE DEVELOPED FOR



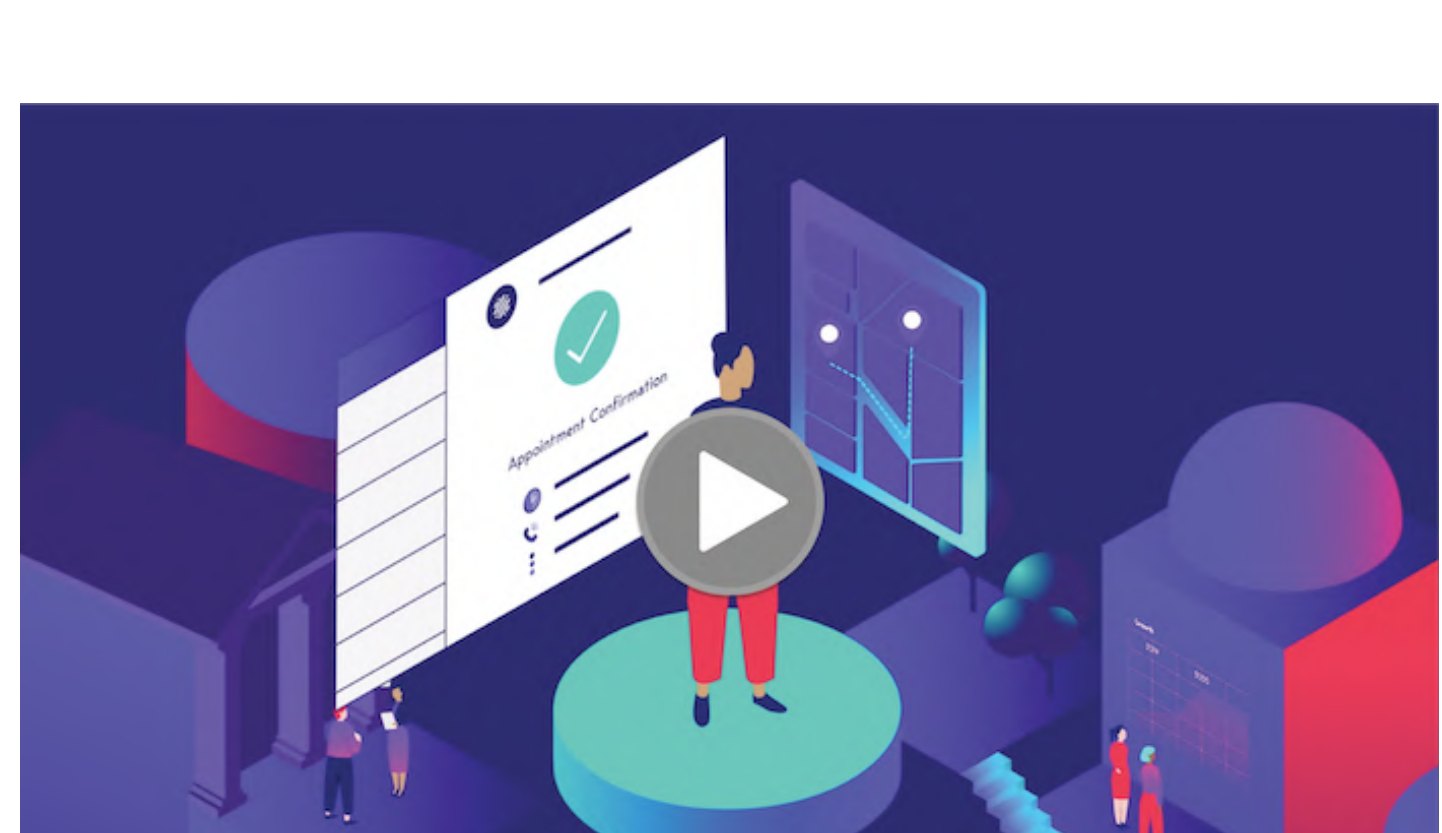
TECHNICAL IMPLEMENTATION



Our Ruby on Rails team improved their PDF system, developing calendar integrations with different third parties such as **Outlook, iCal, or Google Calendar**. We are also part of the team that develops from scratch **middleware integrations** between the main platform and major enterprise clients, each with their own particularities.



The Front-end team adapted **single page apps** based on designs and added specific functionalities to deliver seamless user experiences. We extended the main product's reach by developing extensible apps with **AWS Lambda functions** and by delivering personalized and accessible journeys in compliance with **WCAG 2.1 criteria**.



SALESFORCE INTEGRATION

ASSIST Salesforce team developed a **mapper** that leverages **custom metadata types** in Salesforce to translate any data type from external systems into concrete Salesforce objects. We fully integrated the main Rails app on both sides and the distributed managed package. Apex tests were written, recommended features were added, and refactoring was carried out – evolving the project to “v2” for which we also maintained the **ISV Salesforce organization**.

CHALLENGES



SECURITY

One of the biggest challenges we overcame was working with a multitude of corporate clients, each with their own **custom systems**, from single sign-on to security compliance requirements – especially in the financial sector. We had to pass third party **security assessments** such as the **ISO 27001 Certification** and analyse policies in depth.



LEGACY CODE

Although identifiable in almost all projects, more underlined here was the challenge of working with a code base that has been modified multiple times by different teams over a total period of 10 years. We had to bring uniformity and **standardize the practices** within the code base in order to meet **new architectural requirements**.

LASTING COLLABORATION

ASSIST Software has been working as a remote team in this project for over 5 years developing new features for the SME and Enterprise platform as well as widgets integration for **multiple enterprise clients** in the financial, retail and government sectors.



SURVIVING CORPORATE STRATEGY RETHINK

ASSIST has remained a technological partner although JRNI shifted their approach from SME/consumer space to B2B, also changing the name from BookingBug to JRNI in the process, to fit their mission better.

ASSIST Software also worked on an Android application for the platform, as well as various third-party integrations, helping the start-up become a **full-scale SaaS platform for customer engagement solutions**.

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