



Service Description

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1. About Picopoint Solutions

Picopoint Solutions is an IT/Marketing company that delivers location-based marketing services over a wireless connection, directly to the customer's smartphone. This ranges from guest access to data analytics, and from custom campaigns to two-way communication with visitors.

Picopoint operates worldwide since 2002. Since then our customer base has ranged from local retailers to large international organisations like VodafoneZiggo, EE|BT, and Liberty Global.

Our services revolve around our cloud-based network management system called "Gatekeeper".



2. About the Gatekeeper Platform

A brief overview of Gatekeepers most interesting features:

Gatekeeper Manages:

- Who can access your network;
- How your network can be accessed (Login with E-mail, Facebook, SMS, Voucher, Personal Details and much more);
- When your network can be accessed;
- How long a user can use your network;
- At what cost a user can use your network, with online payment methods;
- The look and feel of your branded Wi-Fi splash page, that you can customize in your browser.
- Your legal obligations as a Wi-Fi service provider.

Gatekeeper Monitors:

- Usage of your network to make it safe;
- Numbers of users online and sessions that are active;
- Device health status.

Gatekeeper provides Analytics:

- Real-time data about the users on your network;
- Historical data that allows you to look back up to years
- General statistics about users, sessions, and traffic;
- Heatmapping, plotted right on your own map overlay;
- Top routes that have been travelled within your venue;
- Client flow patterns in your venue;
- Segmentation data that estimates your users' home situation, income and education;
- User demographics like language, age and gender;
- User ratings that they left for you;
- Device types and OS information.

Gatekeeper allows you to Interact:

- Using flexible E-mail Campaigns that can be scheduled and fired at specific triggers like every new user, after every third login and more;
- With the powerful Target Audiences feature that can be used to target specific user groups based on many user details that are known to the system;
- Through surveys you can start on your Wi-Fi splash page.

Gatekeeper Connects:

- With your own CRM or Marketing platform;
- APIs available for your data-sharing needs;
- Data exports are available from the online Dashboard.

3. Solutions

3.1. Branded Guest Access

State-of-the-art guest Wi-Fi is a great service to offer your customers. But why not make it count for your business, by adding a personal touch? We make it possible to customize your captive portal with logos, visuals and easily manageable messages to your audience. This will bring your brand to the customer's smartphone, tablet or laptop at a very low cost.

We also offer a wide range of login methods: e-mail, unique customer loyalty keys, Facebook or perhaps your own custom form? These options will always allow you to find the right balance between a hassle-free user experience and getting the data you need.

Example login methods:

E-mail & password

The customer provides email address and password; Combines a list of email addresses that can serve as the beginning of a customer database or to complement your existing base. These addresses can then be used for an e-mail campaign.

Facebook

You can let your customers sign in with their Facebook account. This ensures that they are online with one button press. Additionally, you can increase your online community because you can give the customer an opportunity to "Like" your Facebook page.

SMS

You can let your customers login with a mobile number. An access code will be sent by SMS. This verification ensures that you are collecting real data. You can collect a database of mobile numbers that can be used for promotional purposes.

Voucher

Your customers can login with a voucher. This login method is particularly applicable on paid admission. This login method often seen at events.

Loyalty Card

Let the customer sign in with a loyalty card. This way you can increase the number of customers in your loyalty program and add value to your loyalty as a whole.

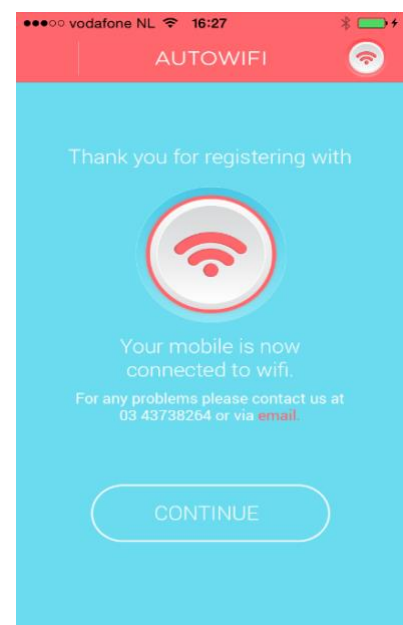
Personal details

With a customizable form you can collect other personal details in exchange for admission to your Wi-Fi network.

Mobile App login

You can use your Mobile App as an authentication method for you Wi-Fi. This brings with it the following advantages:

- Creates a great experience for the user;
- Your app can be downloaded, even if there is no 3G / 4G coverage;
- Is an incentive for customers to download your App

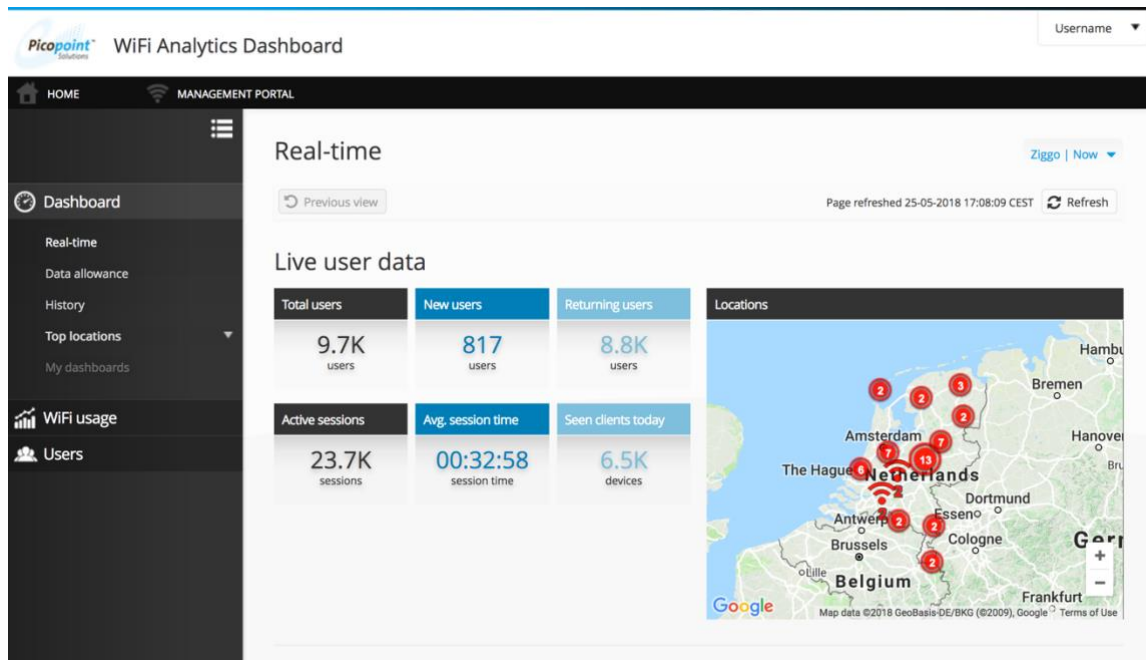


3.2. Wi-Fi Analytics

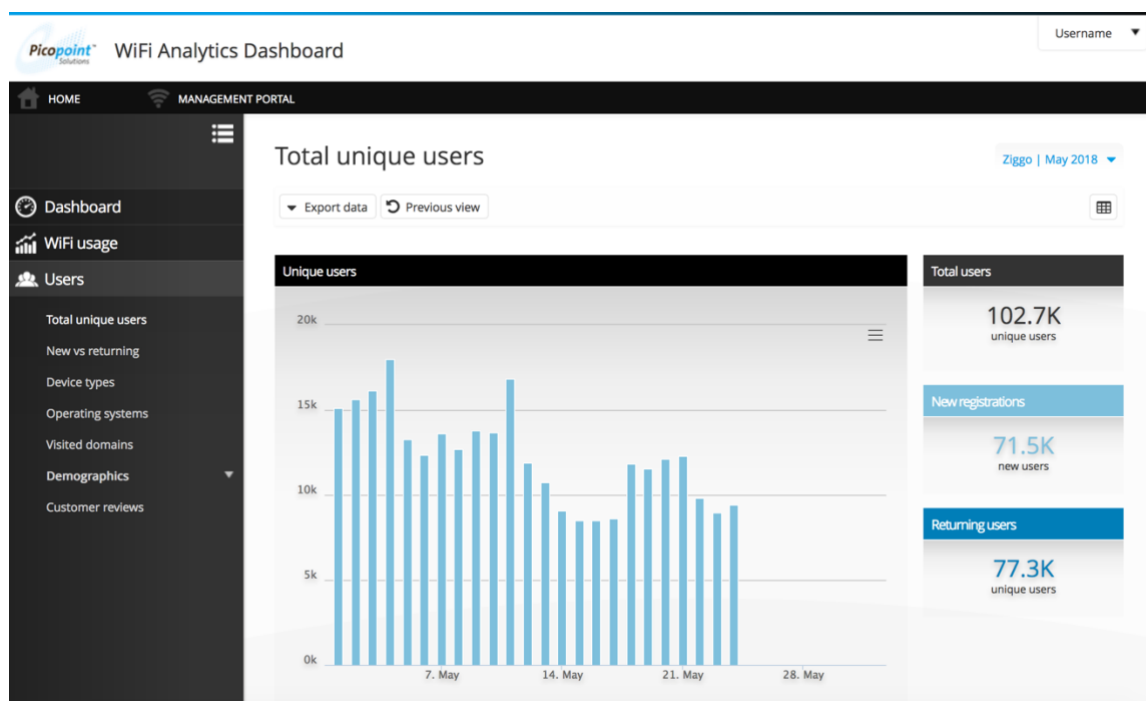
Now you have collected valuable information about your customers through your Wi-Fi network. This information can help you tune your marketing better. Our Wi-Fi Analytics Dashboard helps you navigate all this data efficiently, so you can start planning your next marketing strategies.

Real-time and historical data

The Wi-Fi Analytics Dashboard contains real-time information about what is happening on Location, Group and Company level. You can follow live how many people are online, how they use your network and how many of them are new registrations.



You can also access the Data warehouse to see historical data from months, or even years ago, and compare how you have increased your business.



Top locations

In the Analytics Dashboard you can see statistics per location, group of locations or for your entire account. You can also see a number of top lists so you can see how your locations perform against each other. You can compare the total users, sessions, data traffic and provided user data.

Benchmarking

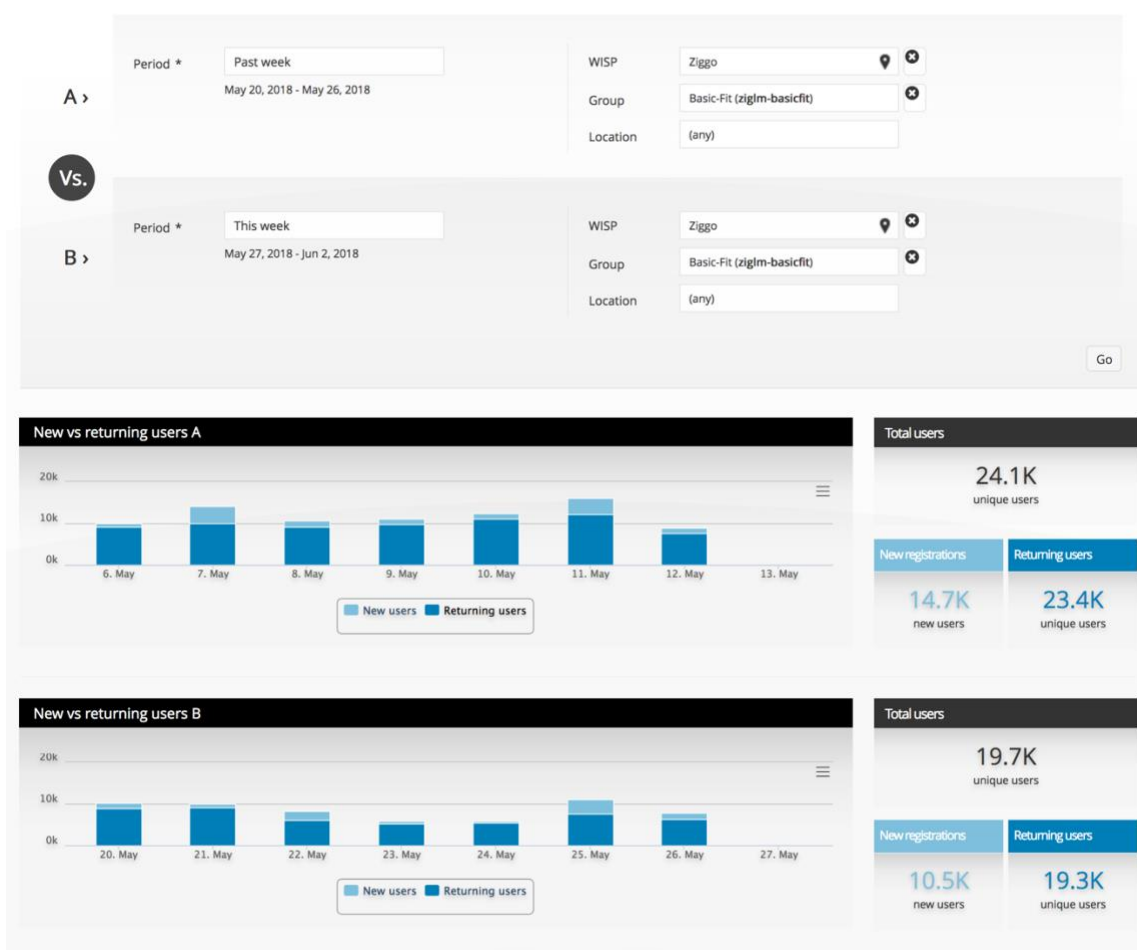
If you want a more detailed comparison, you can use “Benchmarking”. You can select two locations or groups that you would like to compare, and for each of those two you can select a specific time period in which you are interested.

This means you can compare two locations or groups, but you can also select the same location twice, and use different time periods. For example, you can see how your location performed in week 2 compared to week 1.

Example scenario's

location A – time period X	Vs.	location B – time period X
location A – time period X	Vs.	location A – time period Y
location A – time period X	Vs.	location B – time period Y

Benchmarking

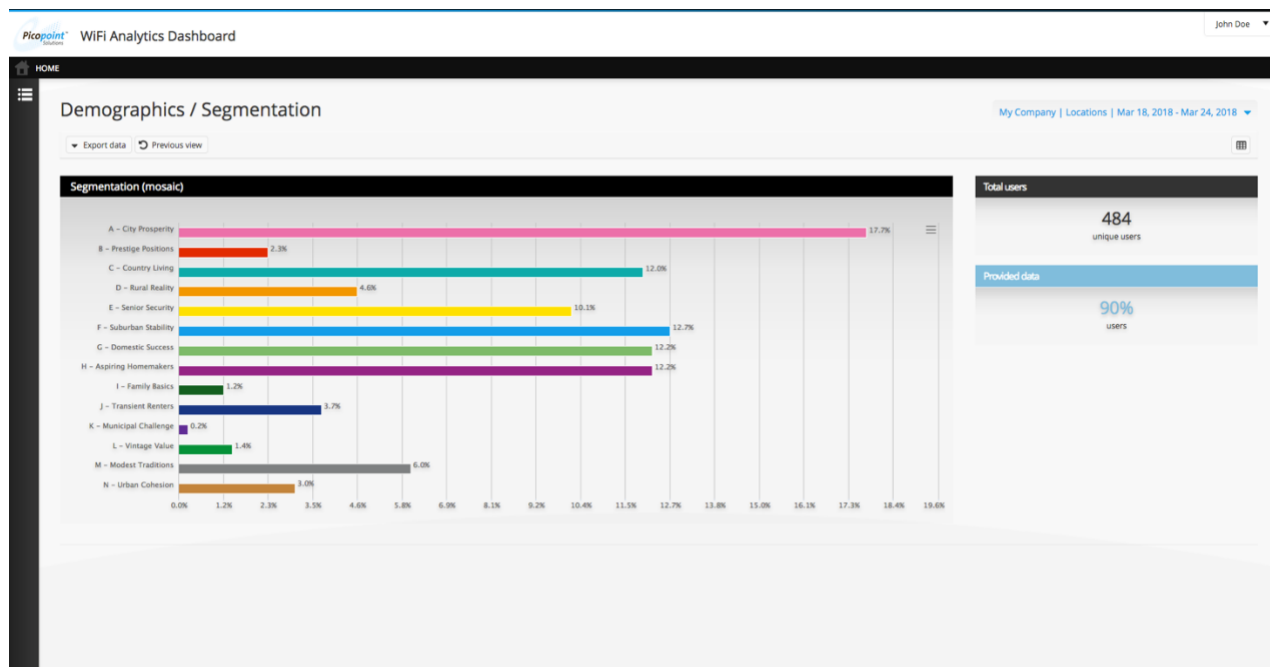
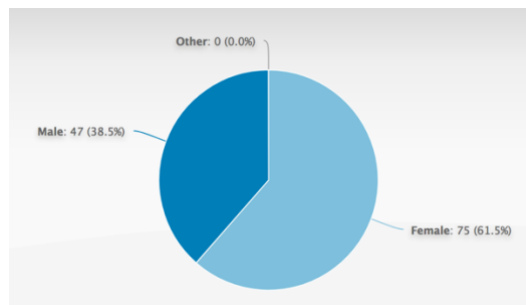


Demographics

There are also demographics at your disposal. This allows you to see what kind of people are visiting, their age, gender, language and device type / OS.

Segmentation

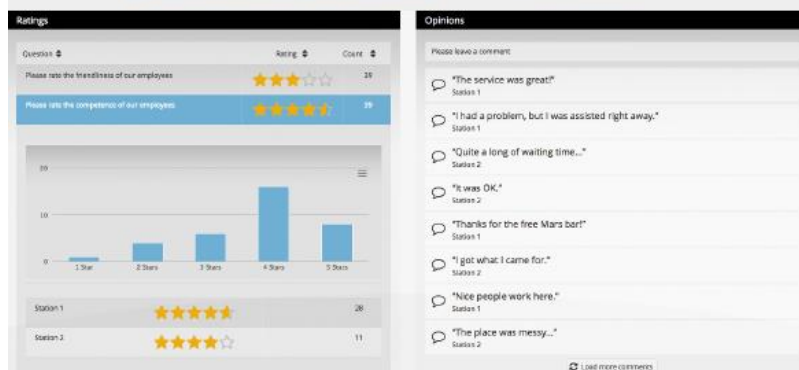
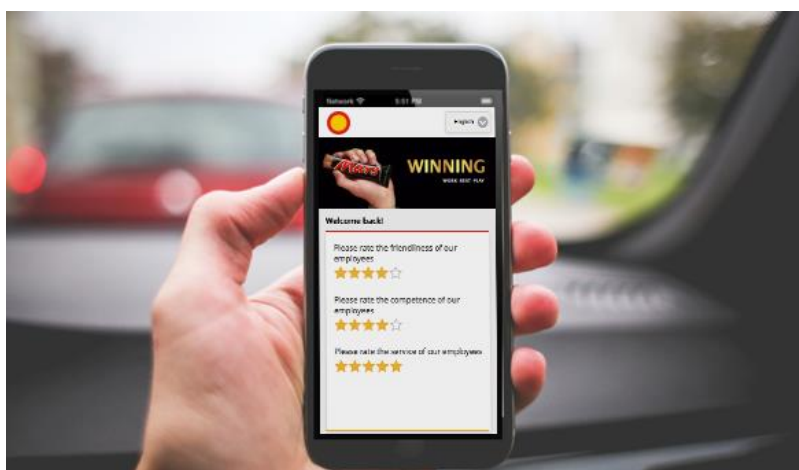
If you want to know more, how about using Mosaic (by Experian) segmentation to find out how they live and what they have to spend?



User ratings

Once a user returns to your venue, you can also ask them how you did, by using surveys on the captive portal. The results of these surveys can also be found in the Analytics Dashboard.

A survey can be used to collect user ratings and comments. You can compare how users experience the friendliness of your staff between multiple locations.



3.3. Engage your visitors

You can do more than just look at the user data you collected. Follow it up with interaction and engage you visitors with special offers and promotions via the Engage Dashboard.

Target Audiences



Advertising becomes much more powerful with the “target audiences” feature. Since we gathered user data during a users’ Wi-Fi login, we can now use that information to create segments in our userbase. Instead of sending everyone a promotion with 50% discount on beauty products, we can send that promotion only to women between 20 and 60 years old. To men aged 16 and up we can send a promotion on razor blades. This opens up many opportunities.

Email Campaigns

Setup customisable e-mail campaigns on specific triggers like first visit, a certain number of returning visits or send out feedback forms with Starred integration (www.starred.com). Then target your e-mail campaign to a specific set of users by defining a target audience as explained above. With these powerful tools you can really get your message across to the people who are most likely to listen to it.

E-mail layout and texts

◀ Back ✖ Cancel ✉ Send test e-mail Save

Images	Preview
<p>image1</p> 	
<p>URL's</p> <p>URL 1</p> <p>https://www.cityplaza.nl/fanplaza/</p>	
<p>Texts</p> <p>Text 1</p> <p>Dear * FIRST_NAME *,</p> <p>Text 2</p> <p>Congratulations!</p>	<p>Dear * FIRST_NAME *,</p> <p>Congratulations!</p> <p>Since you have visited us 3x, you have earned free parking time at our shopping mall.</p> <p>Claim your unique offer here</p> <p>Happy shopping!</p>

Wi-Fi splash page promotions

You can also manage the content shown on your Wi-Fi splash page in a similar fashion. Users who try to log in to your Wi-Fi network will see these promotions right on their mobile phone. You can also apply target audiences here, so you have full control over the kind of promotions a user gets to see.

Surveys

You can also have surveys on your Wi-Fi splash page. This means you can collect user feedback in exchange for Wi-Fi access. You can setup what question will appear on your splash page per location, or group of locations.

3.4. Visitor density and COVID-19 control

Many facilities are in need of information about visitor density and movement in their venue. This information is useful for crowd control, to find 'pinch points' in the building or as input to make important strategic decisions. Our cost-effective solution monitors visitor density intelligently and continuously.

The **COVID-19 pandemic** makes these services invaluable for anyone trying to regulate visitor flows.

How does it work?

At present, many facilities provide Guest Wi-Fi as a service for visitors while they wait. The facility will be equipped with guest hotspot equipment such as Access Points and routers.

All phones, tablets, laptops etc. that have Wi-Fi enabled, will regularly scan for possible nearby Wi-Fi access points. Picopoint collects these probes from the on-board Access Points and the retrieved data is used to create 5-minute interval snapshots counting all seen devices. We can leverage this data to give insights and indications of current and historical visitor density.

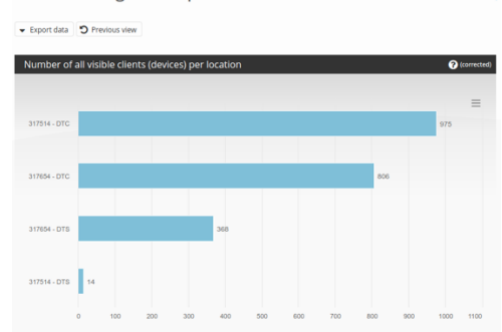
Picopoint Solutions are fully compatible with multiple hardware brands and can often be adapted for the existing hardware infrastructure. It keeps the privacy of users safe and is built on a fully scalable cloud-based infrastructure.

Richness of data

The valuable information is presented in a private online dashboard, giving clear insights in:

- Quick overview of the current visitor density per facility in the last 5-10 minutes;
- Overview of average visitor density per facility over longer periods (hours, days, months);
- Detailed overview of last hour and historical density over time;
- Heatmapping of visitor density over time in a facility;
- Status benchmarks over time of the average visitor density per hour of the day / day of the week.

Client tracking - count per location



Visitor density per AP in the last 10 min.

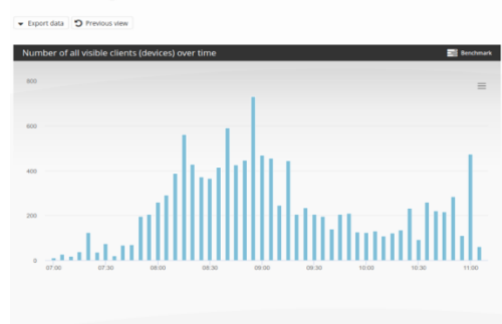
Be notified on high density

It is possible to setup alerts for high density situations through mail and SMS. Alerts can be individually tailored for specific time periods, facilities, density thresholds and more.

Flexible setup

All data can be grouped if required in different segments, benchmarked and focused on specific periods of time. All displayed metrics can be exported to CSV and Excel. Additionally, Picopoint has a fully documented API to quickly share the data with existing data management platforms.

Client tracking - count over time



Visitor density in a facility during the morning

COVID-19 Crowd control, alerting and background investigation

- During the COVID-19 pandemic these are all great tools to have available.
- Realtime crowd control information can help you to gain insight in visitor density to structurally improve social distancing in a facility.
- Alerting can be enabled to receive notifications via SMS or E-mail, so you can act if it is too crowded at a certain location.
- Guest Wi-Fi can be deployed to collect information to contribute to visitor registration and background investigation.

Heatmapping



Example heatmap showing density in a facility, and a screenshot displaying the most travelled paths from a specific point inside the facility.

Notifications

Alert on client tracking activity in-/decrease

Save Delete Cancel

Active				Conditions	
Active *	<input checked="" type="checkbox"/>			Alert on less activity	[no alert]
Level	WISP	UR Group	urgroup	Alert on more activity	[no alert]
	Group	UR Group - AGA	urAGA	Compare with *	the average for the last 3 months for the same weekday/hour
	Location	(none)		Only trigger if client count at location is higher than *	600

Time		Notification	
Active on days	Mon Tue Wed Thu Fri	Notify via e-mail	test@picopoint.com
From *	06:00	Notify via SMS	
To *	22:00	Minimum time between notifications	1 hour(s)

Setting up an alert for high density situations during weekdays.

3.5. GPS Tracking and speed measurements for vehicle Wi-Fi

Picopoint Solutions has engineered a cost-effective solution to intelligently monitor speeds and locations of vehicles.

How does it work?

Vehicles like trains are typically demanded to run Guest Wi-Fi through the Department for Transport. There are also examples of busses, taxis and even boats with guest Wi-Fi. These vehicles will be equipped with guest hotspot devices such as Access Points and routers. The on-board Access Points are remotely accessed to retrieve GPS and thus speeds. In most cases, extra hardware is not needed. Picopoint's GPS Tracking features are fully compatible with global industry standards in GPS measurements. The retrieved data is then analysed and stored in a smart cloud-based environment to provide the right information to the right audience. All measurements are provided in metric and imperial.

Richness of data

The valuable information is presented in an online private dashboard, giving clear insights in:

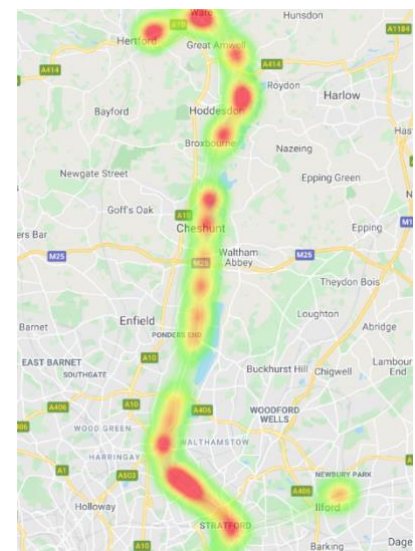
- Status (currently readable/unreadable);
- Total distance covered;
- Time measured;
- Time stopped (standing still);
- Time moving (threshold can be set);
- Number of "laps" (in the pre-set speed trap), best lap, slowest lap, average lap;
- Moving speed (threshold can be set);
- Etc.

Also, data is visualized to offer aggregated readings at a quick glance:

- Position tracking history (where has the train been);
- Vehicle status (based on speeds compared to average);
- Speed heatmapping (at what trajectory does the train slow down);
- Current position, near real time.



All vehicles current positions



Where does a vehicle slow down?

Speed traps

To provide the truest measurement of general vehicles performance, a speed trap can be setup, so different vehicles can all be tested on the exact same stretch (laps). It is possible to dynamically set this up at various locations and analyse accordingly. This ensures a fair rating of rolling stock and counters an information overload.

Warnings

It is easy to setup warnings based on movement status and speed, which will be visible in the Device Monitor dashboard once a specific vehicles' value deviates from a pre-set threshold.

Flexible setup

This information can be grouped in different segments, benchmarked and focussed on specific periods of time. Additionally, Picopoint has a fully documented API to quickly share the data with existing data management platforms.

Flexible dashboard

Health status per device													
Device	Status	Total distance	Total time	Time stopped	Time moving	#Laps	Avg. lap speed	Min. lap speed	Max. lap speed	Avg. lap speed (moving)	Min. lap speed (moving)	Max. lap speed (moving)	Notification
317503 - DTS	●												
317503 - DTC	●												
317503 - OWL	●												
317514 - OWL	●	39.2 mi	0d 22h 47m	0d 21h 30m	0d 1h 17m	1	1.7 mph	1.7 mph	1.7 mph	30.5 mph	30.5 mph	30.5 mph	1 new
317654 - OWL	●	0.0 ft	0d 0h 0m	0d 0h 0m	0d 0h 0m	0							
317670 - OWL	●	321.4 mi	0d 20h 39m	0d 11h 12m	0d 9h 27m	7	45.8 mph	2.8 mph	117.1 mph	63.4 mph	26.7 mph	187.3 mph	

3.6. Network Management

You are in control of activities on your Wi-Fi network. You can see overviews of all active sessions, online users. You are able to manage users and sessions or terminate sessions.

You can see the session details of every session, like:

- Username;
- Location;
- Session start time
- Session duration;
- Data traffic.

You can also go to the user profile that belong with the session to see all provided user data.

This is useful for customer support, so you can help Wi-Fi users when they come to you with issues. You can also abuse on your network, and act to it.

Active sessions

Ziggo | Now ▾

Session details ✕ Terminate session

Start time ▴▾	User	Location ▴▾	Duration ▴▾	Data up ▴▾	Data down ▴▾
28-05-2018 11:42:29 CEST	kj32y9aj@ZZ	zig133074798-02	00:00:00	0 B	0 B
28-05-2018 11:42:29 CEST	88abb6561f4967f8@ZZ	zig132996839-01	00:00:00	0 B	0 B
28-05-2018 11:42:29 CEST	c6f7b47ce822c799@ZZ	zig133001158-01	00:00:00	0 B	0 B
28-05-2018 11:42:28 CEST	ke72y6wu@ZZ	zig133074798-02	00:00:00	0 B	0 B
28-05-2018 11:42:28 CEST	424869116278bbe8@ZZ	zig134727580-01	00:00:00	0 B	0 B
28-05-2018 11:42:28 CEST	kf47hu1o@ZZ	zig133074777-02	00:00:00	0 B	0 B
28-05-2018 11:42:27 CEST	kj21yxv7@ZZ	zig133074798-02	00:00:00	0 B	0 B
28-05-2018 11:42:28 CEST	ko83y0da@ZZ	zig132996590-02	00:00:00	0 B	0 B
28-05-2018 11:42:27 CEST	ko611cpk@ZZ	zig133001158-02	00:00:00	0 B	0 B
28-05-2018 11:42:27 CEST	a7cf9ca429a076b4@ZZ	zig133074543-01	00:00:00	0 B	0 B

3.7. Hardware Monitoring

Ideally your network is running smoothly, and your users are having a good Wi-Fi experience. To make sure it stays like that, use our Device Monitor Dashboard. Here, you can see all your Access Points, and how they are performing. You can get alerts if performance issues are detected.

Health status per device								
Device	Device Type	Processor	Memory	Uptime	Users online	Passive users	Status	Notifications
VLE617	cradlepoint	0%	41%	0d 1h 19m		0		
YXY792	cradlepoint	0%	41%	0d 3h 0m		0		
VXE727	cradlepoint	0%	41%	0d 1h 0m		0		
VLY606	cradlepoint							

If you are having problems, you can now see where the issues are, and get your IT department in the loop. Your Wi-Fi network will be completely functional again soon, coverage is restored, and your users can go online everywhere in your venue.

4. Feature Details

Location Manager

Setup wizard	Customize Wi-Fi splash page
Export	Export new user profiles
Content filter	Manage content categories
	Set allowed domains
	Set blocked domains
Vouchers	Manage vouchers
	Manage voucher types
	Voucher activation report
Edit location	Location settings
Map settings	Define points of interest
Manage alerts	Inactivity alerts
	GPS tracking alerts

Profiles & Sessions

Manage	Active sessions
Export	Custom export user profiles

Engage Dashboard

Surveys	Setup survey
	Results
E-mail Campaigns	Manage campaigns
	Statistics
Define target audiences	For e-mail campaigns
	For landing pages
	For export

Device Monitor

Device health	Current health status *
Device tracking	Current position *
	Tracking history *

Analytics Dashboard

		Time	Type
		now	
Real time	Total users		number
	New users		number

	Returning users			number
	Active sessions			number
	Average session time			number
	Dwell time			graph
	Map with active locations			map
			time period	
History	Unique users			graph
	Total users			number
	New users			number
	Returning users			number
	Total sessions			graph
	Total sessions			number
	New sessions			number
	Ongoing sessions			number
	Traffic up / download			graph
	Traffic combined			number
	Traffic upload			number
	Traffic download			number
			time period	
Top locations	By unique users	Top locations by unique users		graph
		Total users		number
		New registrations		number
		Returning users		number
	By session count	Top locations by sessions		graph
		Total sessions		number
		New sessions		number
		Ongoing sessions		number
	By data traffic	Top locations by upload traffic		graph
		Top locations by download traffic		graph
		Traffic combined		number
		Traffic download		number
		Traffic upload		number
	By average bandwidth	Top locations by avg bandwidth up		graph
		Top locations by avg bandwidth down		graph
		Bandwidth up peak		number
		Bandwidth up average		number
		Bandwidth down peak		number
		Bandwidth down average		number

			time period	
Wi-Fi usage	Total sessions	Total sessions		graph
		Total sessions		number
		New sessions		number
		Ongoing sessions		number
	Concurrent sessions	Maximum concurrent sessions		graph
		Total sessions		number
		Peak concurrent sessions		number
	Average session duration	Average session duration		graph
		Total sessions		number
		Average duration		number
	Login methods	Login methods used to get online		graph
	Data	Data usage in time		graph
		Traffic combined		number
		Traffic download		number
		Traffic upload		number
		Bandwidth in time		graph
		Bandwidth up peak		number
		Bandwidth up average		number
		Bandwidth down peak		number
		Bandwidth down average		number
	Seen clients	By location *		heatmap
		Over time *		graph
		Total seen clients *		number
	Client flow	Top routes *		map
		Flow *		map/animation
			time period	
Users	Total unique users	Total unique users		graph
		Total unique users per period		number
		New registrations per period		number
		Returning users per period		number
	New vs Returning	New vs Returning		graph
		Total users		number
		New registrations		number
		Returning users		number
	Device types	Unique device by type		graph
		Total devices		number
		Unique Laptops		number

		Unique Mobile		number
		Unique Tablets		number
	Operating systems	Device operating systems		graph
	Demographics	Users by age range		graph
		Total users		number
		% users provided data		number
	Users by Gender	Users by Gender		graph
		Total users		number
		% users provided data		number
		Male Users		number
		Female Users		number
		Other Users		number
	Language	Top 10 user languages		graph
	Area	Total users per zip code area		map
		% users provided data		number
		Top zipcode areas		graph
	Segmentation	Mosaic		graph
		Total users		number
		% users provided data		number
	Customer reviews	Ratings		graph
		Opinions		text
	Benchmarking			graph
	Reports			CSV, XLS, PDF

* Requires supported hardware

