



# Johnson Controls Location Based Services

**Social Distancing Monitoring and Contact Tracing**

The power behind **your mission**



# At Johnson Controls, we transform the environments where people live, work, learn and play.

And we've been doing it since 1885.

## Our Customer Promise

To advance the safety, comfort and intelligence of spaces and places to power your mission.

## Our Values

Integrity First  
Purpose Led  
One Team  
Customer Driven  
Future Focused





# How does Johnson Controls indoor Location Based Services enable safer reopening the buildings?

As we continue to evolve to a new normal, the health and safety of all who enter the workplace is a number one priority. The Johnson Controls Social Distancing Monitoring and Contact Tracing system prepares facilities for the reopening the buildings and helps ensure the health and safety of employees.

- Real-time Social distancing monitoring
- Contact Tracing reporting and scenario planning
- Lone Worker detection and support



# Indoor Social Distancing Monitoring and Contact Tracing Value

## Social distancing monitoring

- Real-time alerts highlight potential social distancing issues
- Identifies social distancing hot spots that are difficult to observe

### Value proposition

- Improves social distancing behaviours
- Following social distancing best practices reassures employees

## Contact Tracing

- Displays employees at highest risk of contracting the virus and reports time and duration of encounters between people
- Detects employees at highest risk of potentially contracting the virus from visiting spaces the infected person previously visited.

### Value proposition

- Reduces employee anxiety and increase confidence
- Minimises the number of employees who have to self-isolate and avoidance of building/floor closure

## Targeted areas for decontamination

- Identifies locations, duration and time if an employee tested positive for Covid
- Usage hot spots to indicate places at higher risk of infection transmission

### Value proposition

- Prioritise targeted deep clean location and scheduling
- Digital cleaning audit trail with completion check that can be shared with employees

## Lone Worker

- Detection of unintended Lone Working
- Duress support

### Value proposition

- Enhance employee well-being
- Support proactive EHS posture

# Solution Overview

## Key Features

- Social Distance Monitoring
- Contact Tracing Reports
- Targeted areas for decontamination



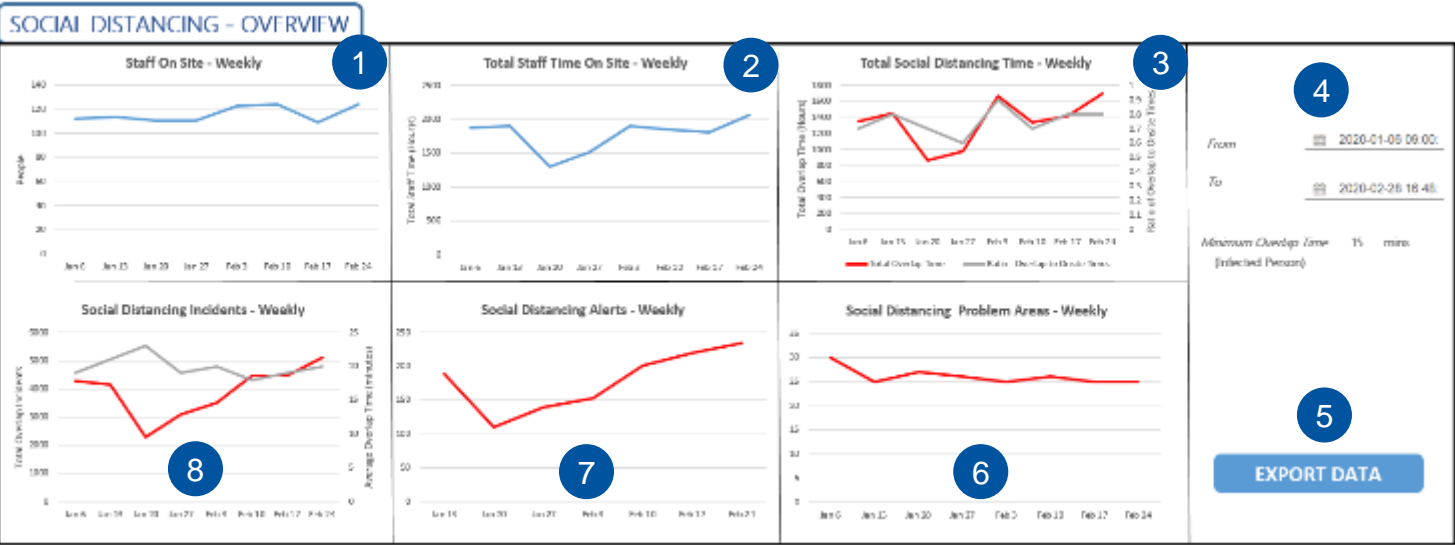
## Wire-free plug and go Infrastructure

- Bluetooth LE Transceiver
- Bluetooth LE Badge
- Bluetooth LE Badge with Duress Support



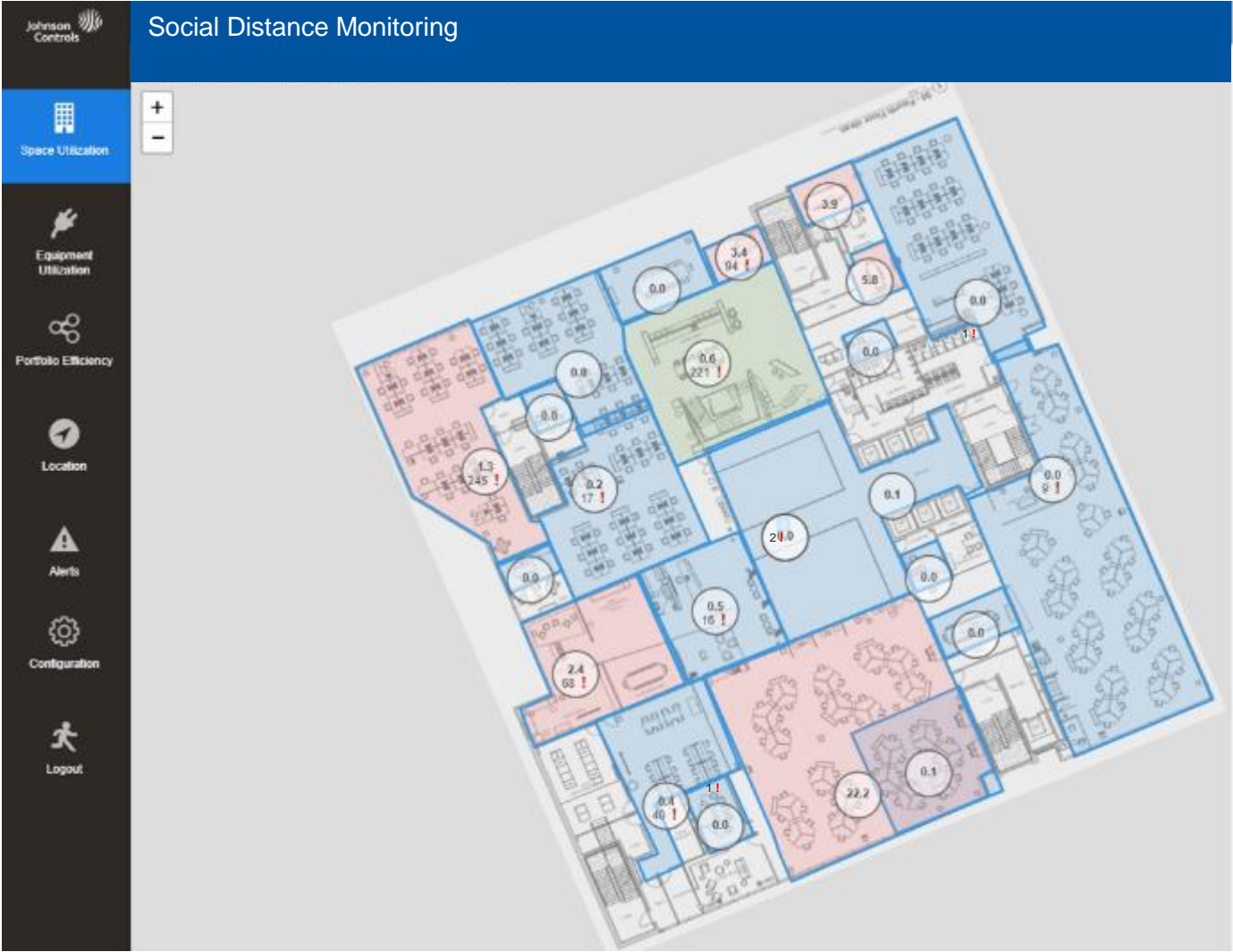
# Social Distancing Overview

Provides a weekly, trend, overview on how well social distancing is being observed in the building.



- 1 Displays the number of unique staff members in the building each week.
- 2 Displays the total time spent in the building by all of the staff each week.
- 3 Displays the total time that social distancing has not been observed weekly. This should be zero.
- 4 Enter the time range for which the report should be run and the minimum contact time to consider.
- 5 The displayed data can be exported.
- 6 Displays the number of different areas where social distancing did not take place. This should be zero.
- 7 Displays the number of social distancing alerts generated. Each incident may not generate an alert – this is configurable. This should be zero.
- 8 Displays the total number of social distancing events and their average duration. This should be zero.

# Social Distancing Monitoring



- RED** - noncompliance
- GREEN** - compliant
- BLUE** - opportunity to add employees and maintain compliance



# Social Distancing Alerts

Johnson Controls

Space Utilization

Equipment Utilization

Portfolio Efficiency

Location

Alerts

Alerts

ActiveCleared

Active Alerts

**Social Distancing Alert – id: 27**  
PolicyMonitor.SocialDistancingRule has detected social distancing policy violation in **Conference Room 5-128B**  
Threshold – 4 people. Detected - 6 people. Ongoing Duration – 30:00  
Created by: system 2020-03-28 10:19:08 (Europe/London) – Updated by: system 2020-03-28 10:34:25 (Europe/Lond

**Social Distancing Alert – id: 27**  
PolicyMonitor.SocialDistancingRule has detected social distancing policy violation in **Conference Room 5-128B**  
Threshold – 4 people. Detected - 6 people. Ongoing Duration – 15:00  
Created by: system 2020-03-28 10:19:08 (Europe/London)

**Social Distancing Alert – id: 31**  
PolicyMonitor.SocialDistancingRule has detected social distancing policy violation in **Hot Desk Area #7**  
Threshold – 6 people. Detected - 9 people. Ongoing Duration – 15:00  
Created by: system 2020-03-28 10:23:42 (Europe/London)

1

Alert severity level raised to Critical as the threshold in Conference Room 5128B now exceeded for 30 minutes.

2

Major alert created for Conference Room 5128B. Exceeded threshold for 15 minutes.

3

All System Alerts, including Social Distancing Alerts are displayed and managed here.



# Contact Tracing - People



# Contact Tracing - People

1 79:22 the cumulative time, in h:mm, SW Engineer\_015 present.

2 SW Engineer\_015 spent the most time in area EastDesk, 32:07.

3 Top 10 areas SW Engineer\_015 spent time in are listed in descending time order.

4 These are the top 10 badges that SW Engineer\_015 overlapped with.

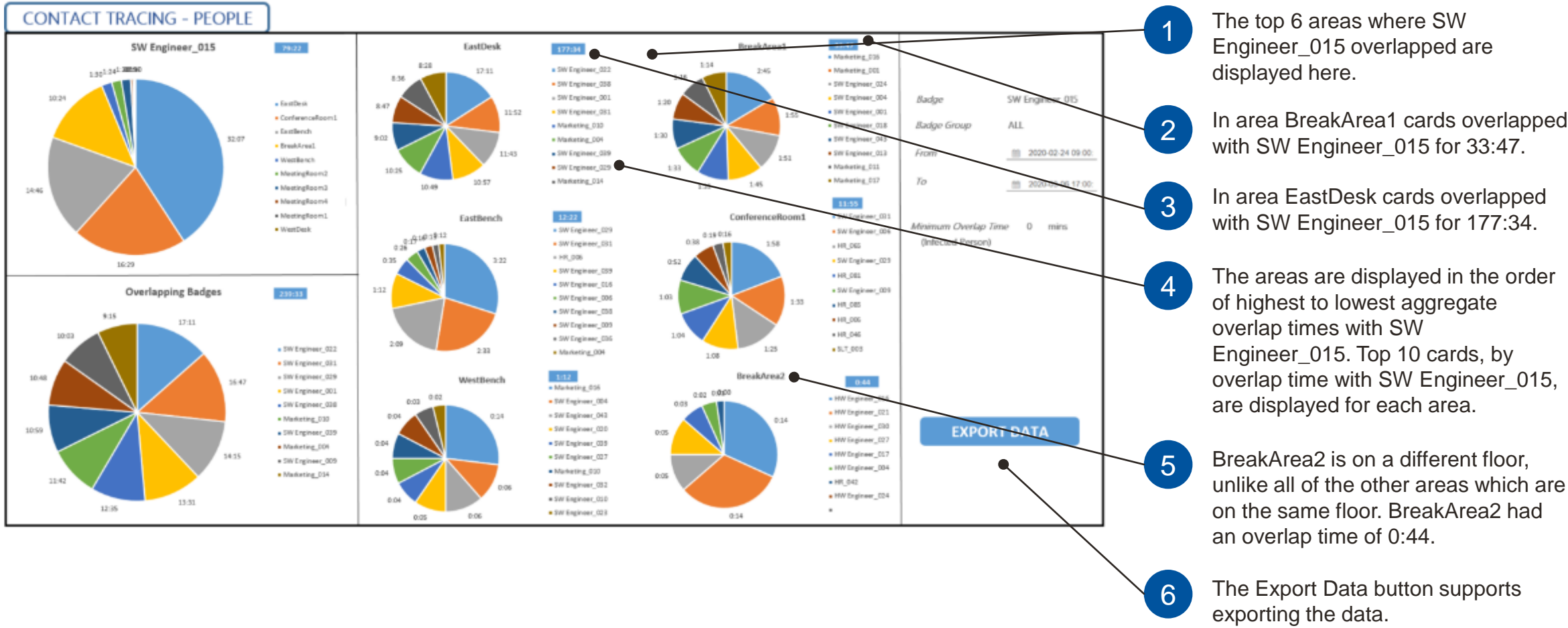
5 Cumulative overlap time for all badges, with SW Engineer\_015, is 239:33.

6 SW Engineer\_022, overlapped the most, with SW Engineer\_015, at 17:11.

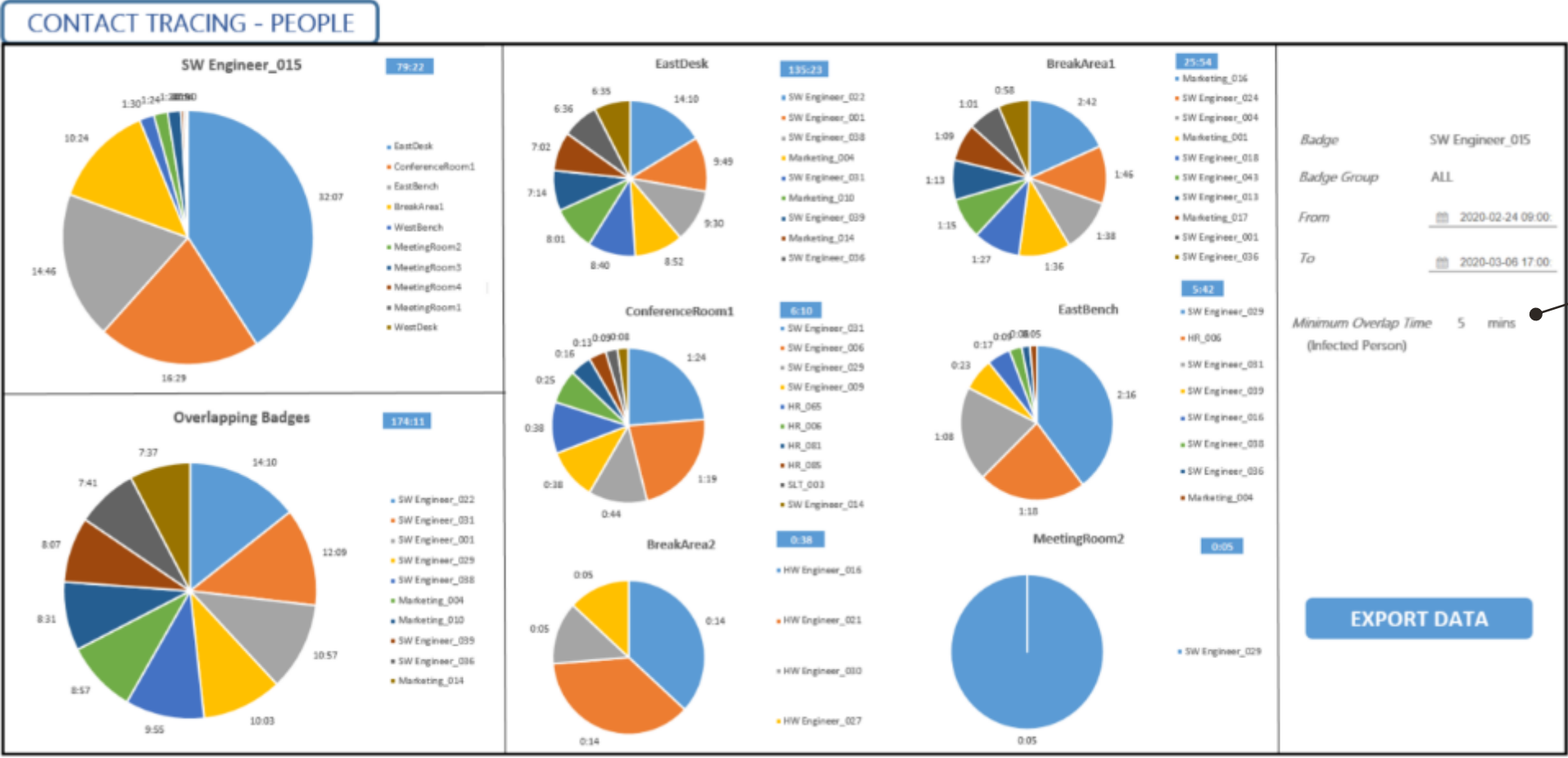
7 The top 10 overlapping badges are listed in time order.



# Contact Tracing - People



# Contact Tracing - People

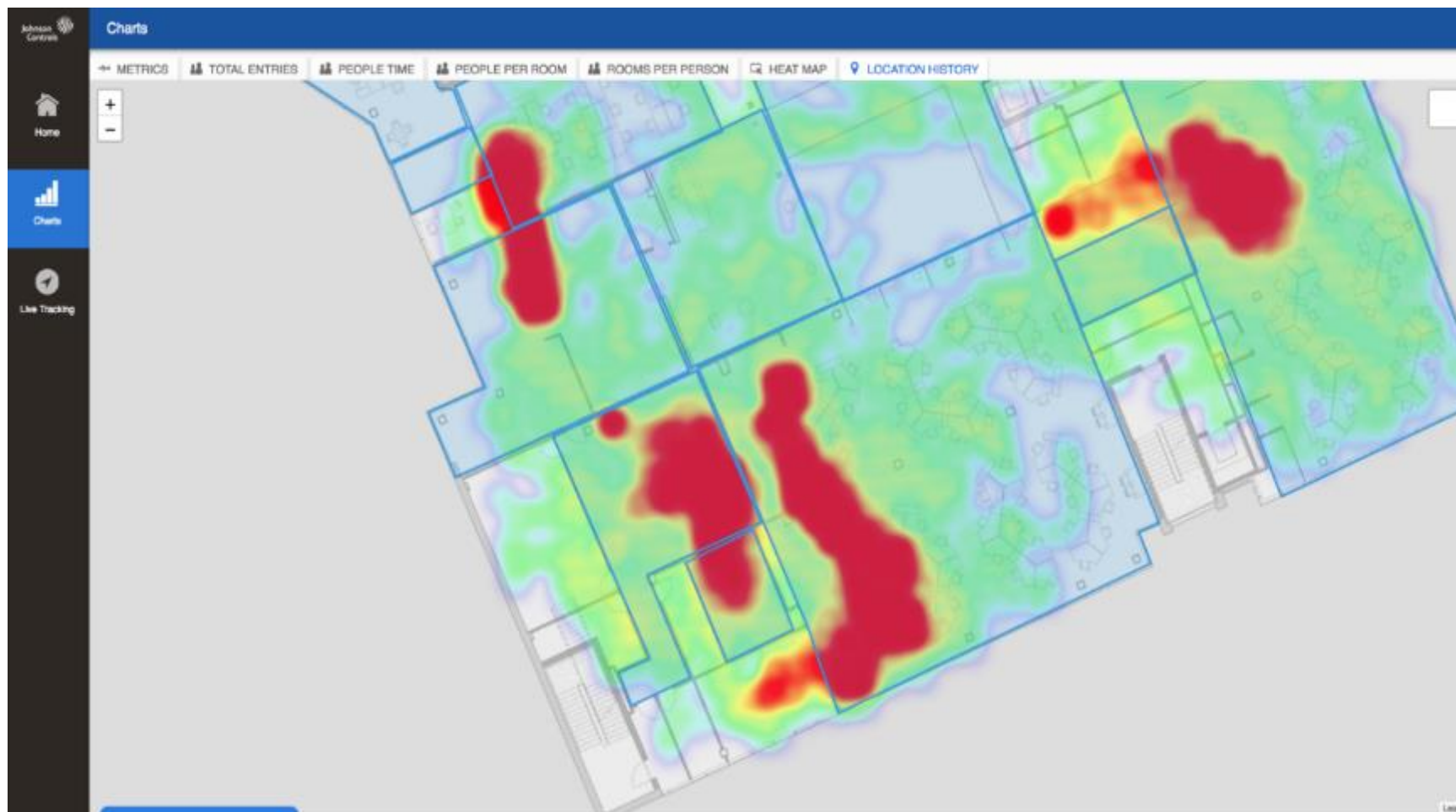


1 Minimum Overlap Time between people has been increased to 5 and all of the aggregate overlap times have reduced.

This capability offers flexibility to customers to report on the contact overlap criteria that works best for their particular environment and circumstances.



# Heatmap Example



- Usage hot spots to indicate places at higher risk of infection transmission

# Contact Tracing Scenario Planning

SOCIAL DISTANCING - INDIVIDUALS

Badge	On Site Time	Social Distancing Violation Time	Social Distancing Violation to Onsite Time Ratio	Unique Badges with Social Distancing Violations	Unique Areas with Social Distancing Violations
SW Engineer_031	79:55	267:30	3.3	57	13
SW Engineer_015	79:27	240:08	3	52	8
HR_003	71:36	147:01	2.1	54	7
SW Engineer_029	69:40	216:36	3.1	62	13
SW Engineer_027	68:52	219:46	3.2	59	7
SW Engineer_001	65:28	319:59	4.9	76	12
HW Engineer_004	65:07	85:16	1.3	43	14
HW Engineer_024	64:58	102:49	1.6	65	12
SW Engineer_030	63:40	170:17	2.7	62	18
HW Engineer_022	63:35	104:09	1.6	48	12
SW Engineer_032	62:47	132:39	2.1	46	11
HW Engineer_027	61:16	114:39	1.9	52	9
HW Engineer_017	61:14	105:51	1.7	50	10
HW Engineer_025	60:25	100:49	1.7	56	12
SW Engineer_006	57:26	220:45	3.8	72	13
SW Engineer_009	56:20	189:45	3.4	57	8
HW Engineer_019	55:59	82:11	1.5	52	12
HW Engineer_030	55:58	51:52	0.9	21	12
Facilities_035	55:17	326:19	5.9	66	2
SW Engineer_004	54:57	178:41	3.3	60	14
HR_010	54:42	265:25	4.9	62	12
SW Engineer_010	54:14	230:44	4.3	56	12
SW Engineer_039	53:29	200:53	3.8	52	13
SW Engineer_022	52:29	284:11	5.4	44	3
Facilities_047	51:38	333:46	6.5	62	2
HW Engineer_023	51:13	40:04	0.8	23	11

From 2020-02-24 09:00

To 2020-03-06 17:00

Minimum Overlap Time 15 mins (Infected Person)

EXPORT DATA

1 Provides Social Distancing info on an individual badge level.

2 Enter the date range, Feb 24 – Mar 6, and the minimum contact time to consider

3 Displays the total number of unique badges with which this badge has violated social distancing. This should be zero.

4 Displays the total number of unique areas where this badge has violated social distancing. This should be zero.

5 Figures highlighted in red are above the norm. Reducing these would reduce the risk of covid transmission. These should all be zero.

6 Displays the total people hours, which this badge has violated social distancing, during it's time on site. This should be zero.

7 Displays the total time (hours) spent on site

# Rich suite of additional capabilities

Solution supports a wide range of additional business capability that can be enabled through software:

**Reopening the buildings:** Post Covid workplace planning and agile implementation.

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**Space utilization:** Empirical measure of utilization of all areas within a building.

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**Analytics:** Workflow\collaboration analysis.

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**Security:** Restricted area access alerting, visitor tracking with zoning and rules.

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**Health & Safety:** Duress support for Lone worker monitoring, panic buttons and fire and security building evacuations.

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**Asset tracking and utilization:** Empirical measure of utilization of important equipment.

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**Occupancy and Mustering:** Other EHS benefits include monitoring building evacuation, occupancy checking and mustering.

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**Digital audit trail:** Firewalled team monitoring with audit trail recording.

# Comparative Solution Analysis

	Johnson Controls LBS	BLUETOOTH PHONE APP	UNDER DESK SENSORS	OVERHEAD PEOPLE COUNTERS	ACCESS CONTROL SYSTEMS	CCTV SYSTEMS
Contact Tracing	●	◐	○	○	○	◐
Social Distance Monitoring	●	◐	◐	◐	◐	◐
Building Overview Trend Reports	●	○	○	○	○	○
Lone Worker Monitoring	●	○	○	○	○	◐
Lone Worker Duress Support	●	◐	○	○	○	○
Outdoor Use	○	●	○	○	◐	◐
Ease & Speed of Deployment	●	◐	◐	◐	◐	◐
Wireless Infrastructure	●	●	●	○	○	○
Rich Additional Building Use Cases	●	◐	○	○	◐	◐



# Summary

As we continue to evolve to a new normal, the health and safety of all who enter the workplace is a number one priority. The Johnson Controls Social Distancing Monitoring and Contact Tracing system prepares facilities for the reopening the buildings and helps ensure the health and safety of employees.

- Real-time Social distancing monitoring
- Contact Tracing reporting and scenario planning
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Johnson Controls Location Based Services are developed using Privacy by Design and supports Privacy by Default



# Johnson Controls Social Distancing Monitoring and Contact Tracing

We work to build the future you want with safe, efficient and optimized environments

Visit us at

<http://www.johnsoncontrols.com/digital>

to learn more about our IoT products, solutions and services.

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