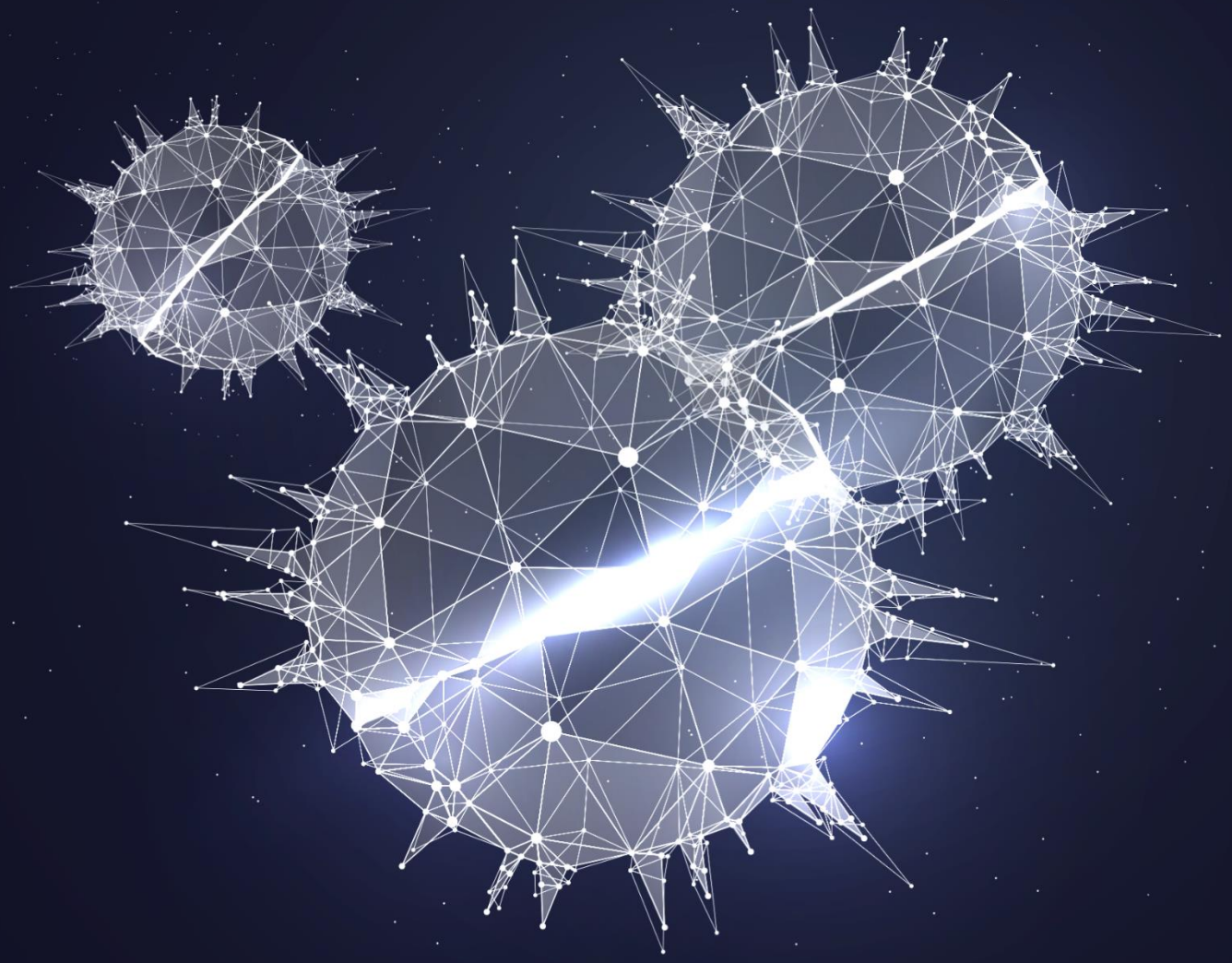
RESONŌ™

The Future of Rapid Disinfection



MIT Enterprise Forum San Diego
September 30, 2020

RESONŌ: Speakers today

Hao Hu - CEO

Hao Hu is the founder and CEO of RESONŌ.
With 15+ years of experience in technology development and operations, Hao and his team have taken RESONŌ from ideation to prototyping to validation in less than 4 month. The company is currently working towards 3rd party aerosol testing/validation and FDA certification.

Previously, Hao was the Head of Operations at Jersey Microwave SATCOM, consultant with Boston Consulting Group and engineer at the Boeing company. He has lead team across multiple disciplines including product development, manufacturing/ops and business development. As a member of the executive team at Jersey Microwave, Hao helped the company achieve market leading position in satellite communication market and led the company through a period of sustained high growth.

Hao holds a BS in Material Science and a ME in Supply Chain Management from MIT.

Kaha Aznaurashvili - COO

Kaha is the co-founder and COO of RESONŌ.
He brings to the team 10+ years of experience in starting, scaling up and expanding technology businesses in both B2B and B2C segment. He is currently focused on developing a scalable solution that meets customer needs utilizing RESONŌ's patent pending technology.

Kaha's previous roles include principle at The Boston Consulting Group, and a co-founder of two successfully exited companies (in supply-chain services and e-commerce fields). Most recently, Kaha worked on the expansion of Bolt OU, an European ride-haling and food-delivery company.

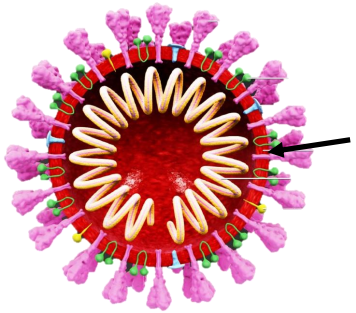
Kaha holds BA in business administration and MBA from Kellogg School of Management

Introduction and agenda

1. **Introduction** – Technology/team/expertise
2. **The problem** - COVID-19 and the indoor economy
3. **Solution** - Product features and benefits
4. **Timeline -** Technology development milestones

RESONŌ, a Radio Frequency (RF) disinfection technology that helps safeguard spaces and communities against COVID-19 and other viruses

A proprietary disinfection and purification technology utilizing Radio Frequency…

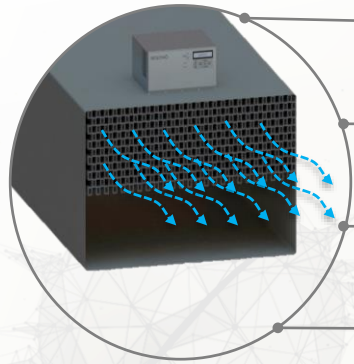


RESONŌ targets the weakest link of the virus – **envelope membrane**

Transmits **resonance frequencies** of the membrane through radio waves

Induces **resonance destruction** & shatters the envelope of the virus to inactivates it

… designed to purify air at commercial scales as well as disinfect static objects & surfaces



- **Building HVAC systems**
- **Elevator air disinfection**
- **Transportation AC**
- **Consumer air purifiers**

- **Medical PPE disinfection**
- **Garment disinfection**
- **Room/space disinfection**
- **Personal item disinfection**

RESONŌ is founded by a team with expertise in technology, virology, and business to specifically address current and future pandemics

Core team

Hao Hu - Founder and CEO

15+ years of experience in technology development. Previous experiences: Jersey Microwave, Boston Consulting Group, Boeing. Hao holds a BS and MS from MIT.

Wayne Miller - RF R&D

Technologist with 40+ years of experience in RF Microwave; holds multiple patents in the RF field and an authority within the radio frequency community.

Mark Benerofe - BD

40+ years of experience in tech, media, sales & marketing. Previously SVP with Sony, EVP with Priceline, and other senior leadership positions with Microsoft, CNN & TEDMED.

Kaha Aznaurashvili - Ops

12+ years of experience in tech startups. Previous experience Bolt technologies OU, Boston Consulting Group. Kaha holds an MBA from Kellogg.

Thanh Nguyen – RF R&D

Technical and business leader with 30+ years of experience in the RF industry. Thanh is the CEO of Jersey Microwave, a premier telecom hardware services provider.

Advisors

Virology

- Professor at NY area research hospital: Clinical & research focus on infectious diseases.

HVAC industry

- 30+ years' experience designing and deploying HVAC solutions for commercial real estate properties across the U.S.

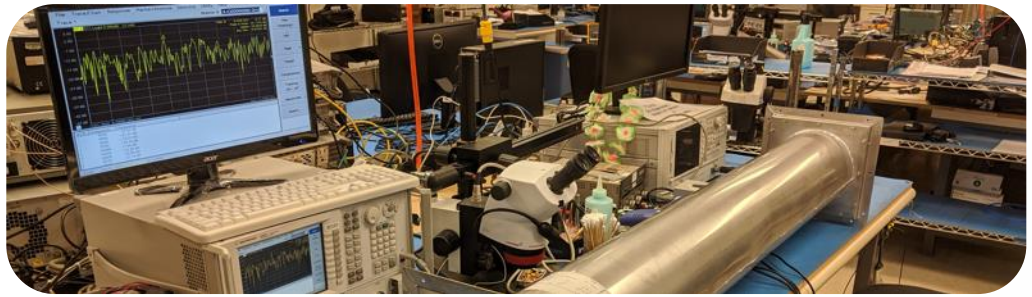
Real estate industry

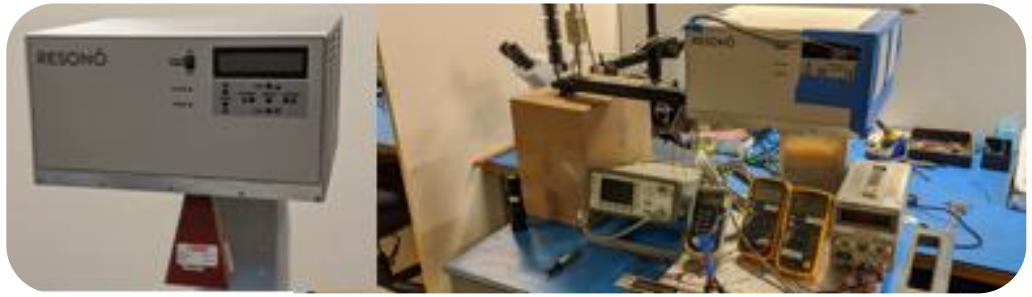
- 40+ years' experience investing and managing commercial real estate in US and abroad.

Transportation

- Technical Fellow with the Boeing company, 30+ years of experience in aerospace.

A unique intersection of virology, physics, and product design required to create an effective and reliable RF disinfectant





Virology

- Access to virus samples and bio-safety levels 2+ lab to conduct required tests
- Continuous improvement and validation on the RF system

Radio Frequency & Microwave science

- Industry experts with combined 70+ years of experience in radio frequency is instrumental to determine frequency and power required to target the virus

Product Design

- Access to sourcing, engineering, and manufacturing to allow building & iterating the product in short cycles

Patent pending technology protected on multiple fronts from replication and competition

The problem

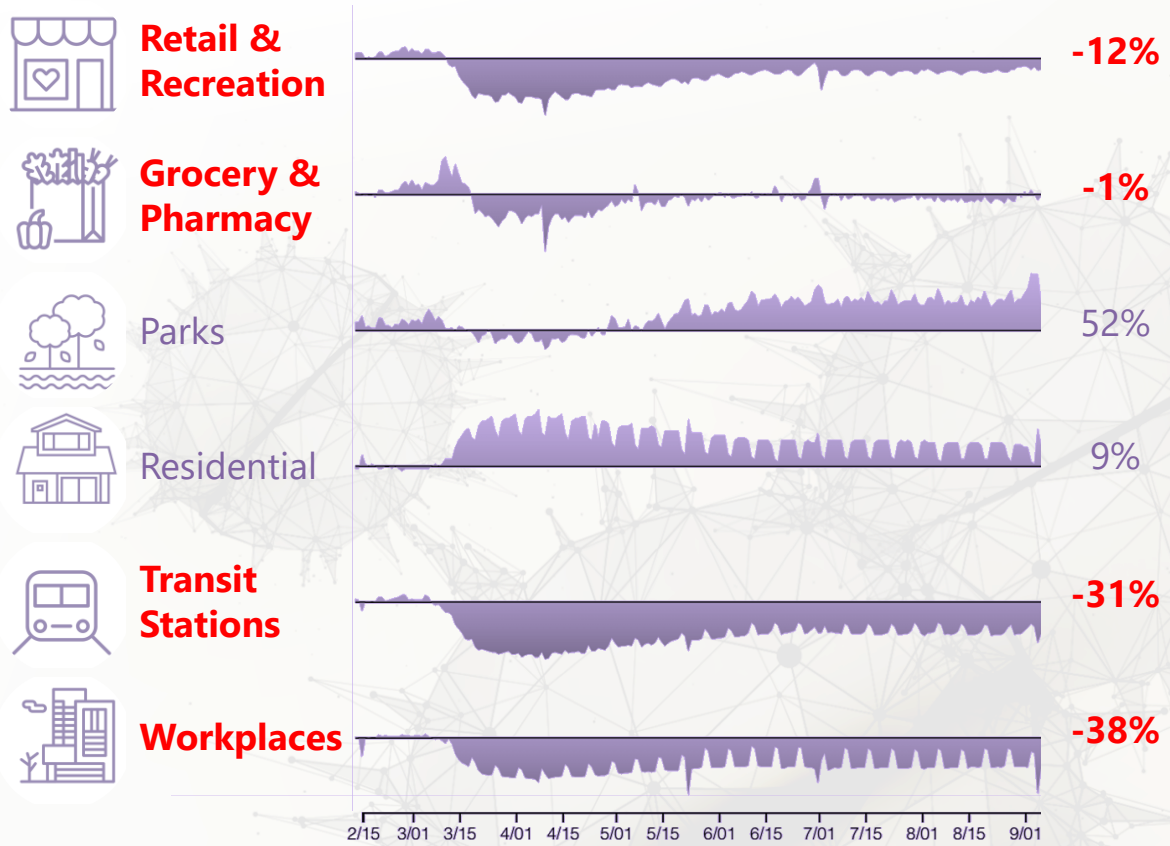
COVID related concerns have significantly influenced community movement and where people spend most of their time

Consumer Sentiment on Safety

I'm concerned about …

- Going to store **44%**
- Returning to office **33%**
- Staying in hotel **64%**
- Using in-person services **51%**
- Taking a flight **74%**
- Going to restaurant **67%**

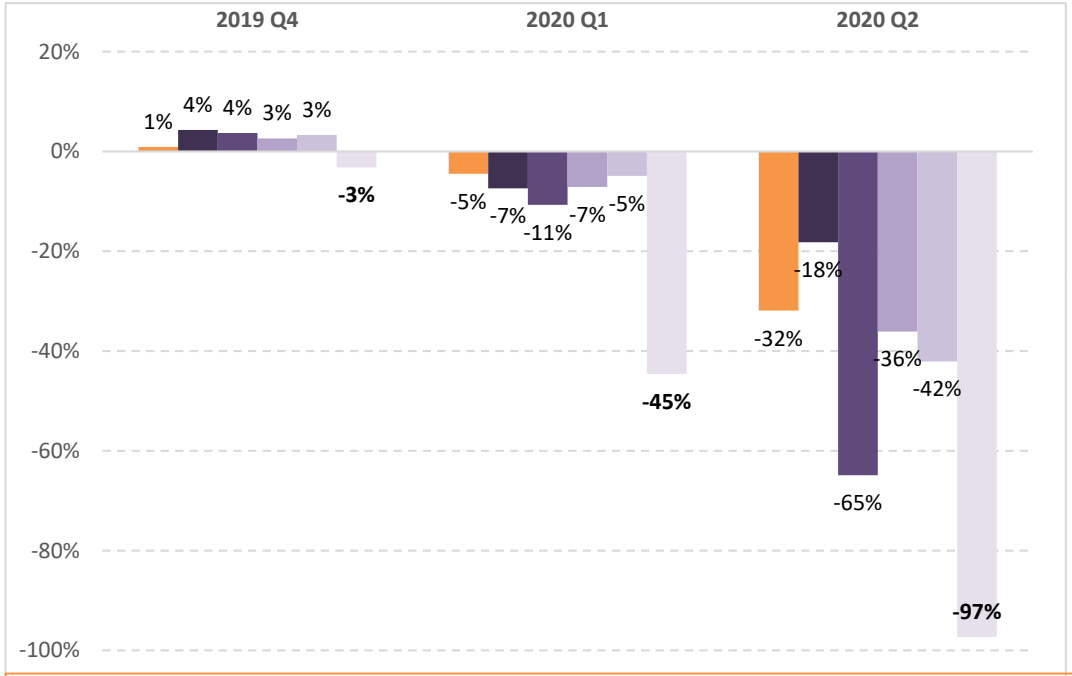
Change in traffic compared to baseline



Source: Deloitte State of the Consumer Tracker ; Mobility report

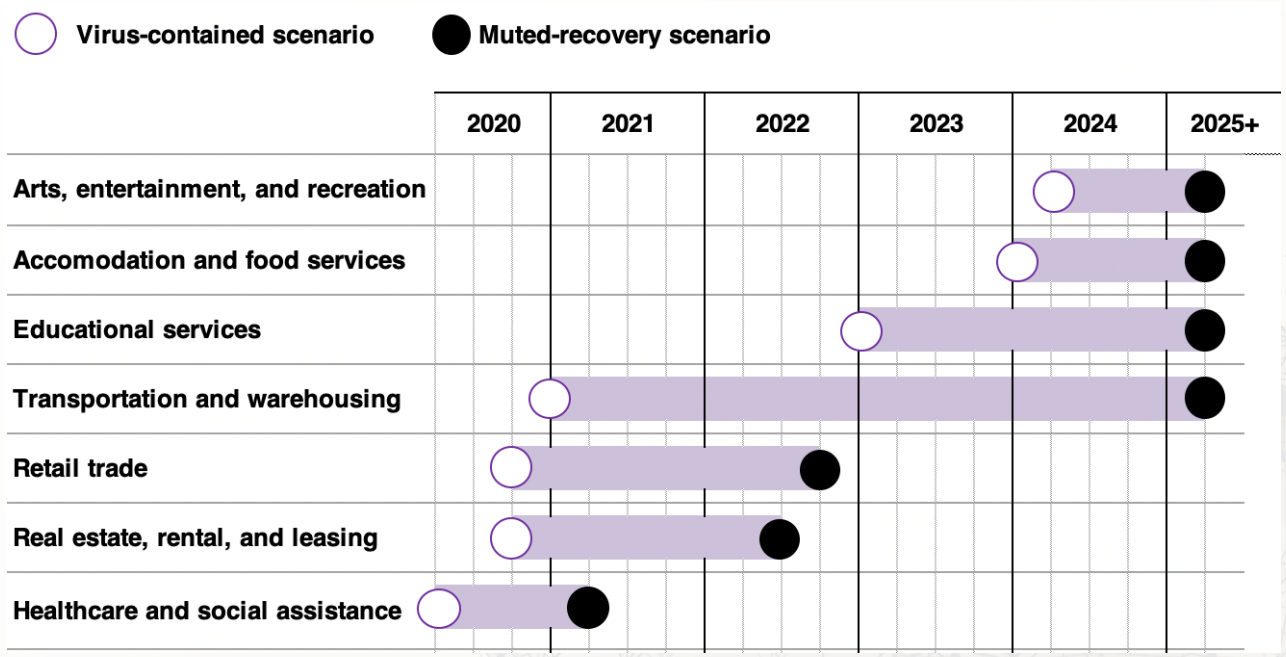
Pandemic has caused ~$3.5 trillion (32%)[1] loss across multiple sectors thru Q2 and indoor economy may take 5+ years to return to pre-COVID levels

Percent Changes in Quantity Indexes for Gross Output



-$3,470 Private industries
-$328 Transportation and warehousing
-$323 Health care and social assistance
-$73 Retail trade
-$39 Educational services
-$152 Accommodation

Estimated time to recover to pre-COVID-19 sector GDP



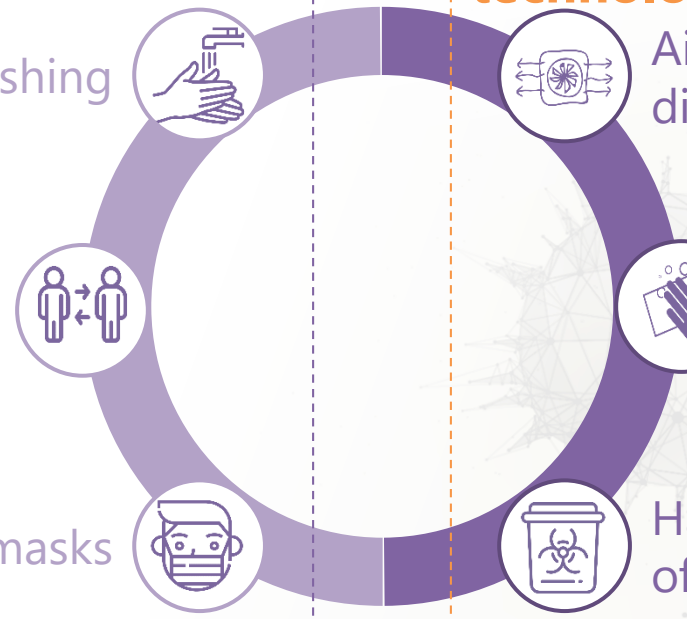
Impact on gross economic output in billions of dollars

Source: 1. Bureau of Economic Analysis; data as of 9/30/20 McKinsey - COVID-19 and the great reset: Briefing note, July 9, 2020 ;

Both behavior changes and technological solutions are required for a comprehensive approach to health and safety

Requires behavioral changes

- Hand washing
- Social distancing
- Protective masks



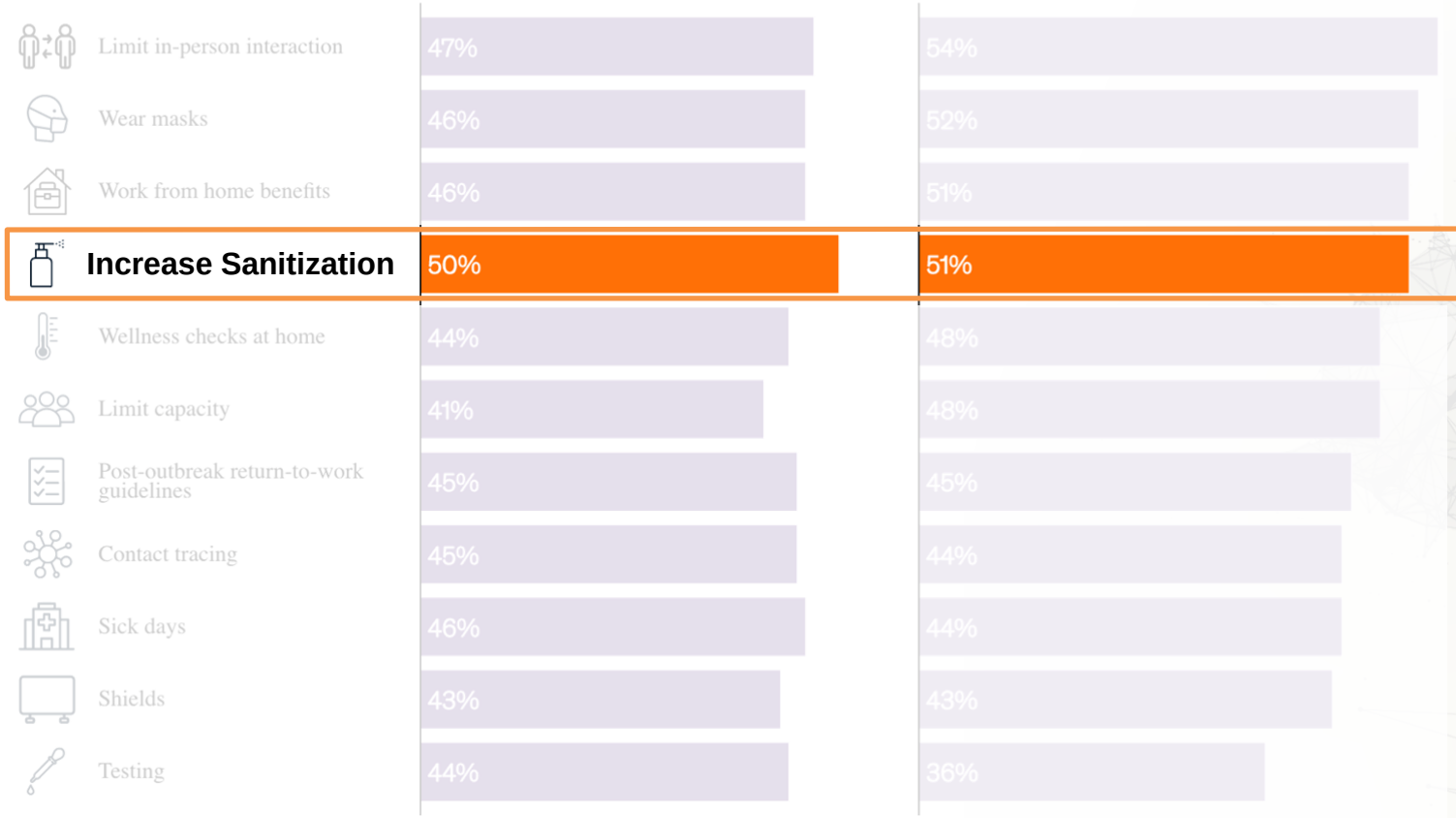
Requires sanitization/disinfection technology

- Air filtration and disinfection
- Surface and item disinfection
- Hazmat disposal of PPE, filters, etc.

RESONŌ is developed specifically to solve these disinfection challenges without incurring operational downtime or increased labor costs

Employers are starting to address building air filtration and sanitization; the most prominent source of concerns for indoor economy

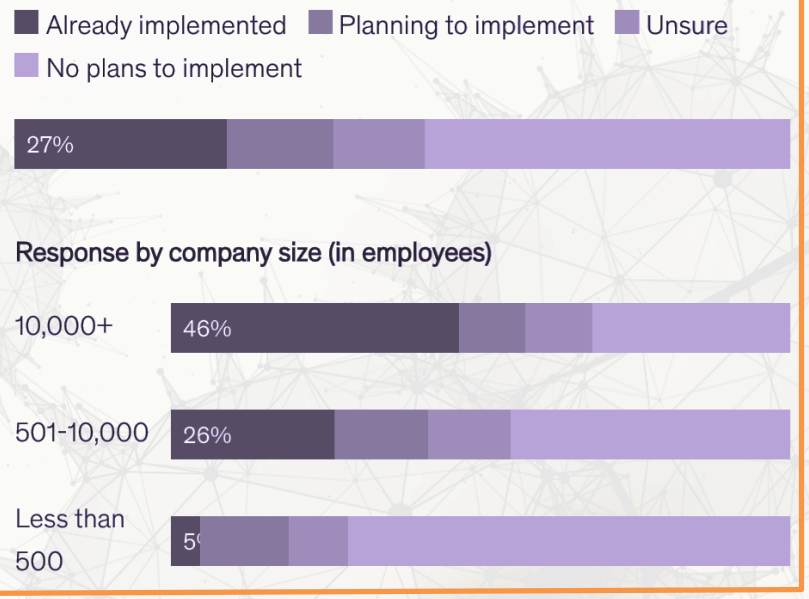
Employees reporting each group of safety measures would make them feel safer working in person



Employers reporting implementation of each group of safety measures

41.2% executives report they have changed or plan to change air filtration/ventilation systems

Changes to airflow patterns, ventilation systems, or air purification / filtration

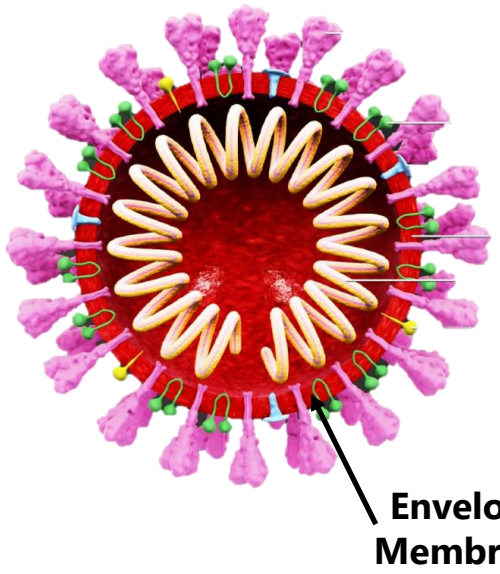


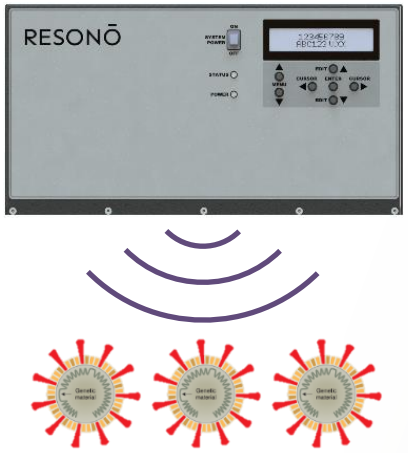
Source: [Mckinsey COVID Response center]

The solution

RESONŌ deactivates viruses using RF induced resonance, providing means to disinfect any environment from pandemic and seasonal viruses

RESONŌ targets the envelope membrane → **RF signals apply pressure to membrane** → **Membrane breaks and inactivates the virus**





RESONŌ can works across all pandemic and seasonal viruses	
SARS (Pandemic)	
H1N1 Swine Flu (Pandemic)	✓
MERS-COV (Pandemic)	
SARS-COV-2 (Pandemic)	✓
H3N2 (seasonal)	✓
Can be tuned to target any new virus in the future	✓

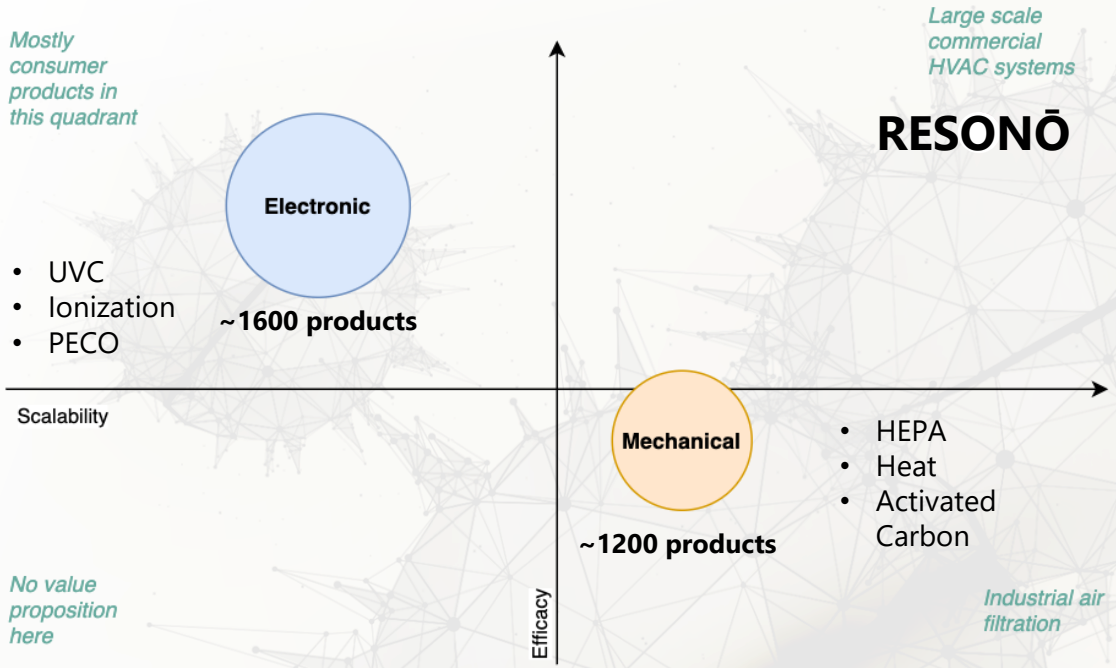
Laboratory testing demonstrates 99.99% decrease of viral load with <1min exposure

Existing technologies are either effective or scalable - not both, leaving a large white space for RESONŌ for larger scale commercial deployments

Benefits of Radio Frequency technology over electronic or mechanical filtration

- **Highly effective -** *99.99% efficacy, tested on actual pandemic and seasonal viruses*
- **95% faster than UVC –** *4 log reduction in less than a minute in static settings*
- **Infinitely scalable -** *can be deployed at any size duct at appropriate power levels*
- **Low CAPEX -** *installed in mechanical rooms of large buildings, without additional infrastructure or disrupting working process*
- **Low OPEX -** *Does not increase static pressure, or burden and energy cost on HVAC compressors*
- **Highly reliable -** *10+ years of life span without any maintenance, no filter or bulb changes required*
- **No side effects -** *100% safe to use, no Ozone or chemical byproducts. RF waves contained in EMI shielded duct*

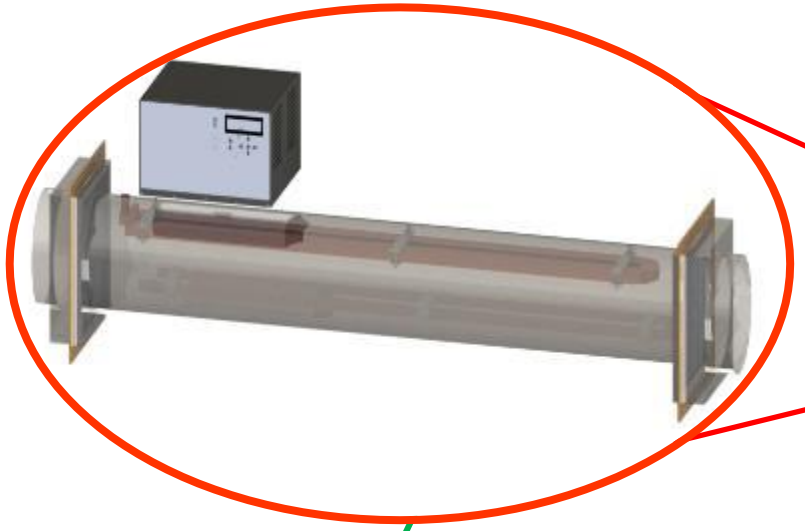
Significant white space for scalable and effective air purification in a ~$90B marketplace by 2025[2]



Source: Internal analysis and California Air Resource Board 2. https://www.arizton.com/market-reports/air-purifier-market-size-analysis

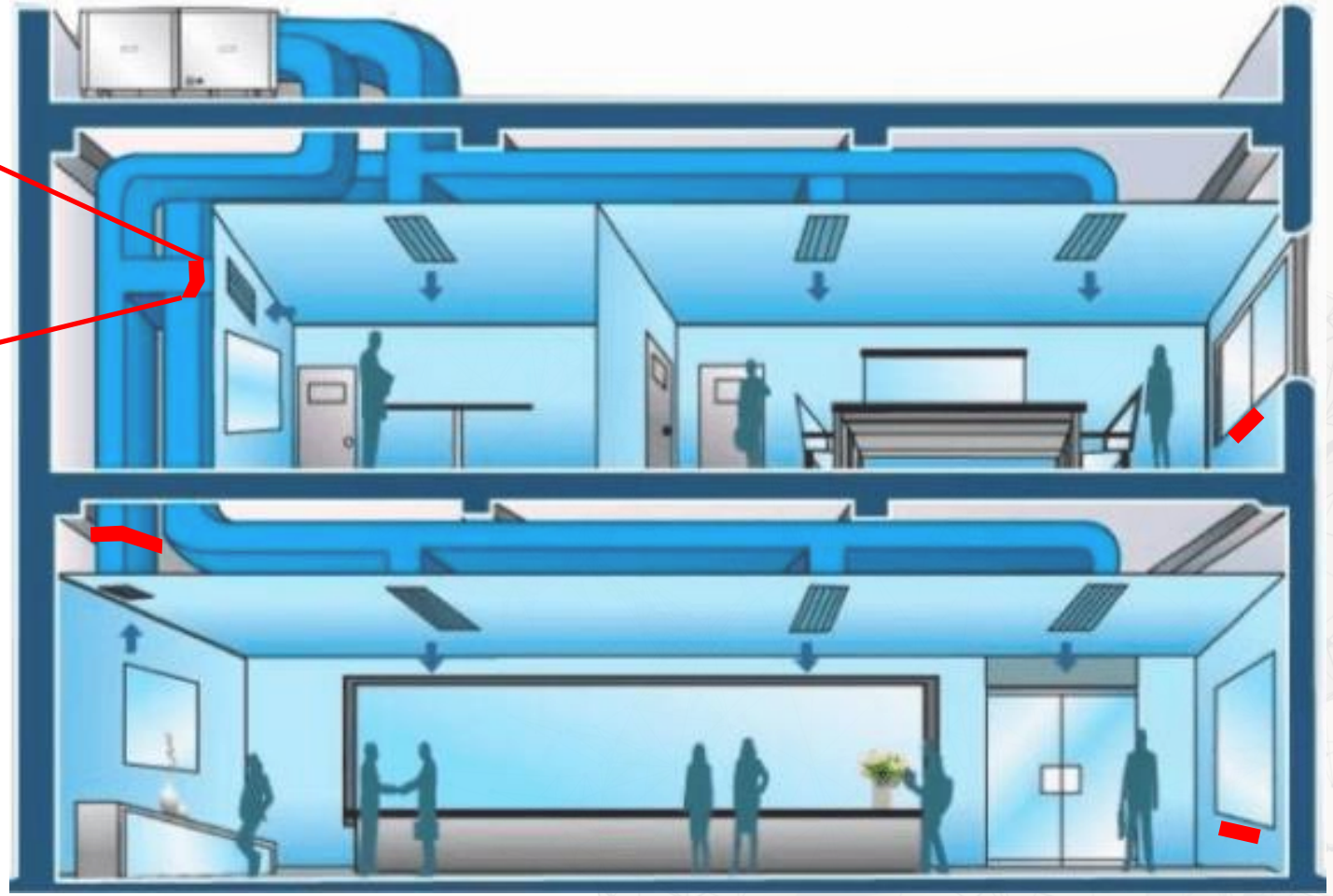
Different applications of the technology

Healthy buildings – HVAC: RESONŌ units installed in centralized ducts can supply entire floors with disinfected/virus free air



Contaminated air is disinfected as it leaves the room through air return ducts without impacting HVAC performance, such as static pressure or temperature

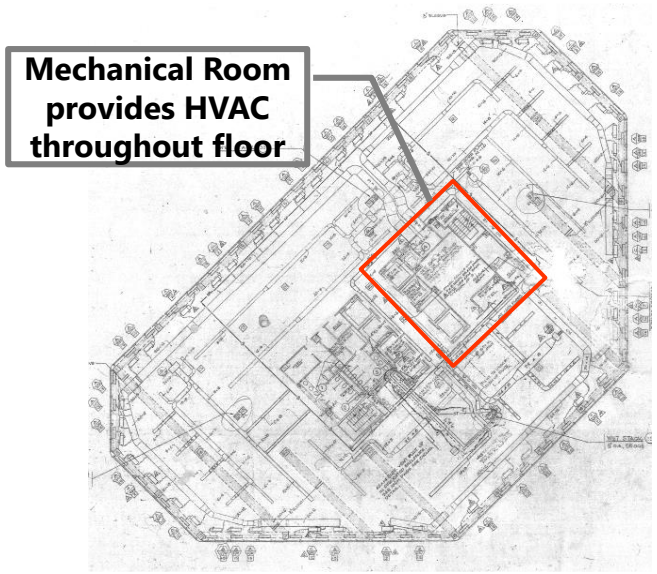
Additional devices are installed to support supplemental air handling units in conference rooms or gathering spaces



Healthy buildings – air disinfection pilot with DC based REIT

Project Building Floor Plan

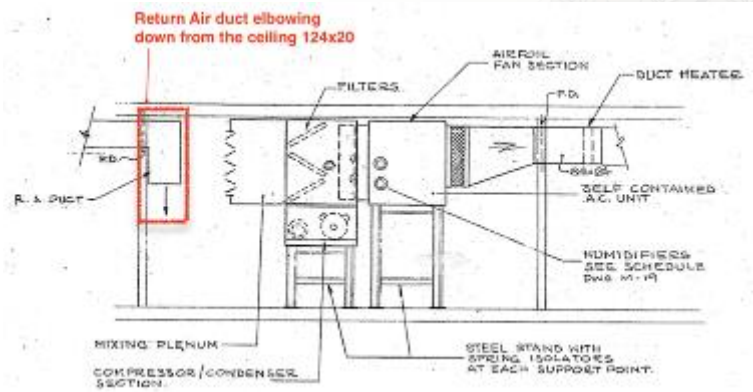
Building Size: 398,000 SF
Average Floor Size: 21,000 SF
Floors: 19



Technology designed to tackle high flow air disinfection needs

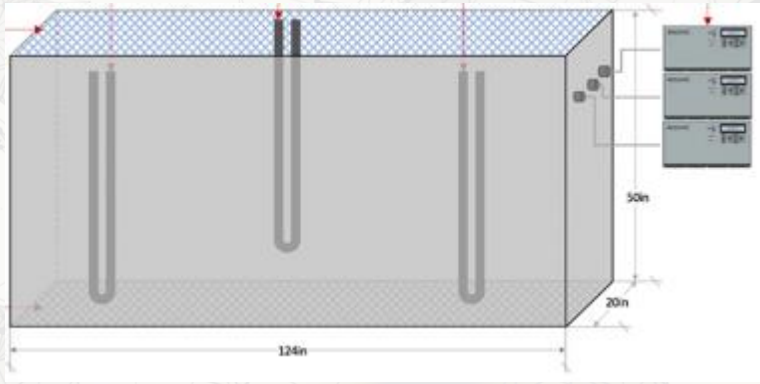
Floor space is serviced by centralized HVAC, volume flow rates exceed 15,000 CFM.

RESONŌ's RF solution is scaled up to meet the airflow requirements without increasing air flow burden on existing HVAC.



RESONŌ technology scaled to tackle whole floor disinfection

An integrated solutions is fabricated and tested at the factory to be installed on site within a day with minimal retrofit and impact to existing tenants or building operators



Healthy Buildings – HVAC: For large scale deployment, RESONŌ provides significant cost benefits, due to large coverage area and lack of maintenance

Sample 360k ft² Implementation

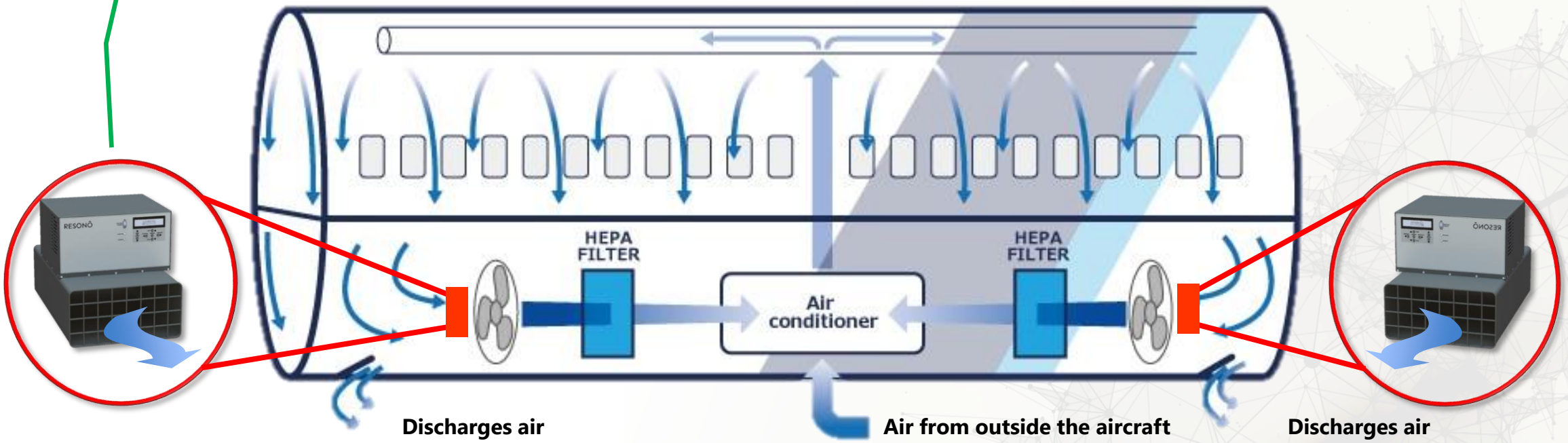
360k sq. ft., 15-story, class A office building

	RESONŌ Radio Frequency	LENNOX UV- light	AERUS PCO
Sq. Feet /product	~10,000	~ 1,500	~2000
# units required	~35	~230	~180
Cost per unit	~$25,000[1]	$4,500[2]	$2,000
Total CAPEX	**~$0.75 – $1.0m**	**~$1.0 – $1.1m**	**~$0.36m**
Cost of parts	$0	$335[3]	$186[4]
Changes per year	$0	1	2
Cost of Labor	$0	$200	$200
Total OPEX / Year	**$0**	**~$0.13m**	**~$0.14m**
Total Cost (1st year)	**~$0.75 – $1.0m**	**~$1.0 – $1.25m**	**~$0.50**
Total Cost (10 years)	**~$0.75 – $1.0m**	**~$2.25 – $2.5m**	**~$1.9m**
	99.99% efficacy*	**90% efficacy[5]**	**90% efficacy[6]**

1. Partnership pricing for initial launch partner, MSRP 40-50k 2. $2500 unit cost for largest unit +2k installation expense. 3. Cost of filter and 6 x UV lamps + replacement 4. Replacement bulb 5. Lennox 6. Study from University of Cincinnati

Public transport – Airlines: RESONŌ provides continuous air purification in cabin to create a healthy flying environment

Scenario – In flight:
Contaminated air is disinfected as it leaves the cabin prior to the HEPA filters, combining disinfection power with filtration to quickly reduce virus content and maintain a healthy flying environment



Discharges air out of aircraft

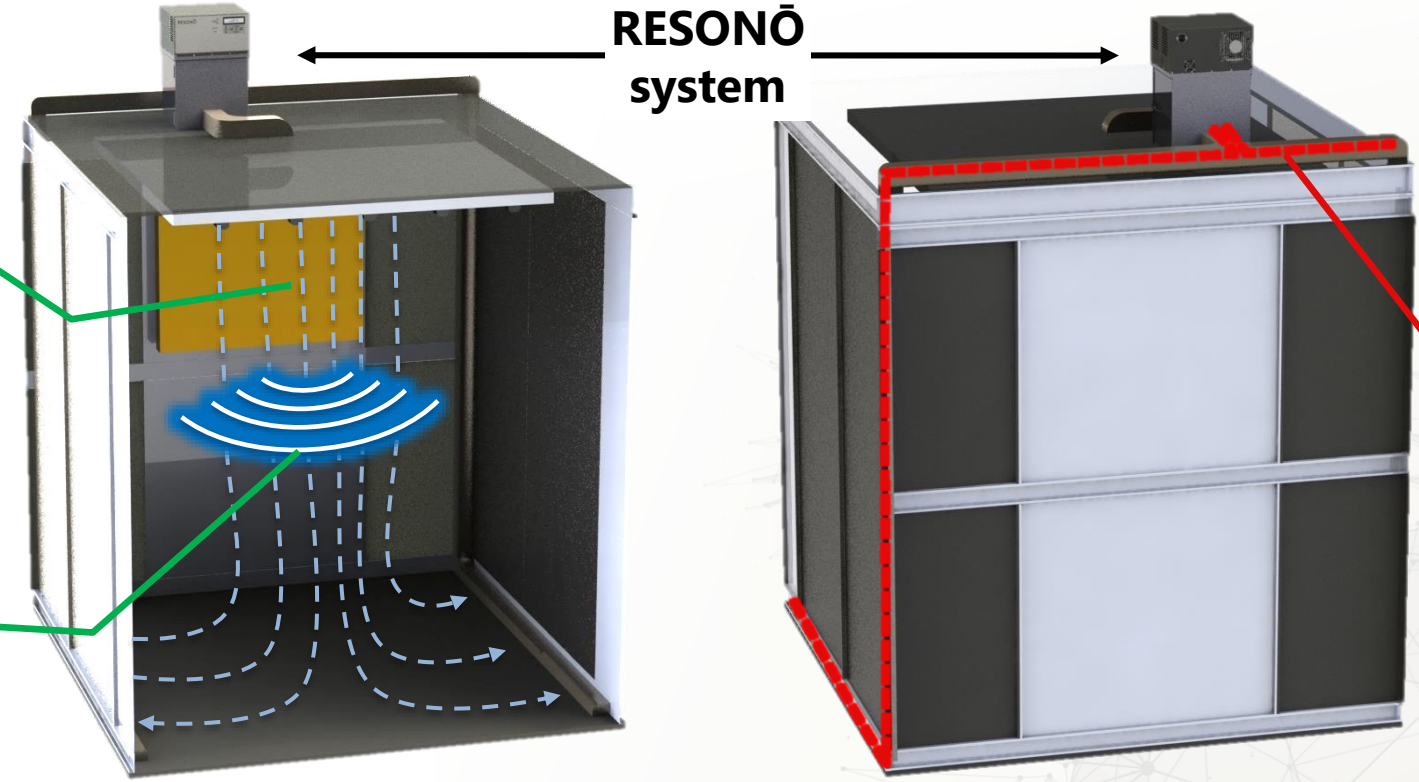
Air from outside the aircraft is processed and filtered

Discharges air out of aircraft

Healthy buildings – Elevators: RESONŌ provides continuous air purification and surface disinfection using a single device

Scenario: In Use
A Curtain of disinfected air is distributed uniformly downward, forcing droplets and aerosols to the floor vents, preventing air from recirculating inside

Scenario: Vacant
RF disinfection sanitizes high touch surfaces in ~1* minutes. Can be done in between trips or part of scheduled protocol



Scenario: In Use
Contaminated air returns through floor duct for disinfection

Comprehensive disinfection designed to minimize cleaning costs and equipment downtime

Retail – Fashion: RESONŌ provides rapid disinfection to not only minimize the spread of disease but also elevate employee and consumer confidence

Show Room & Fitting Rooms

Before and after trying out garment, product is quickly disinfected between associates and customers

Checkout counter

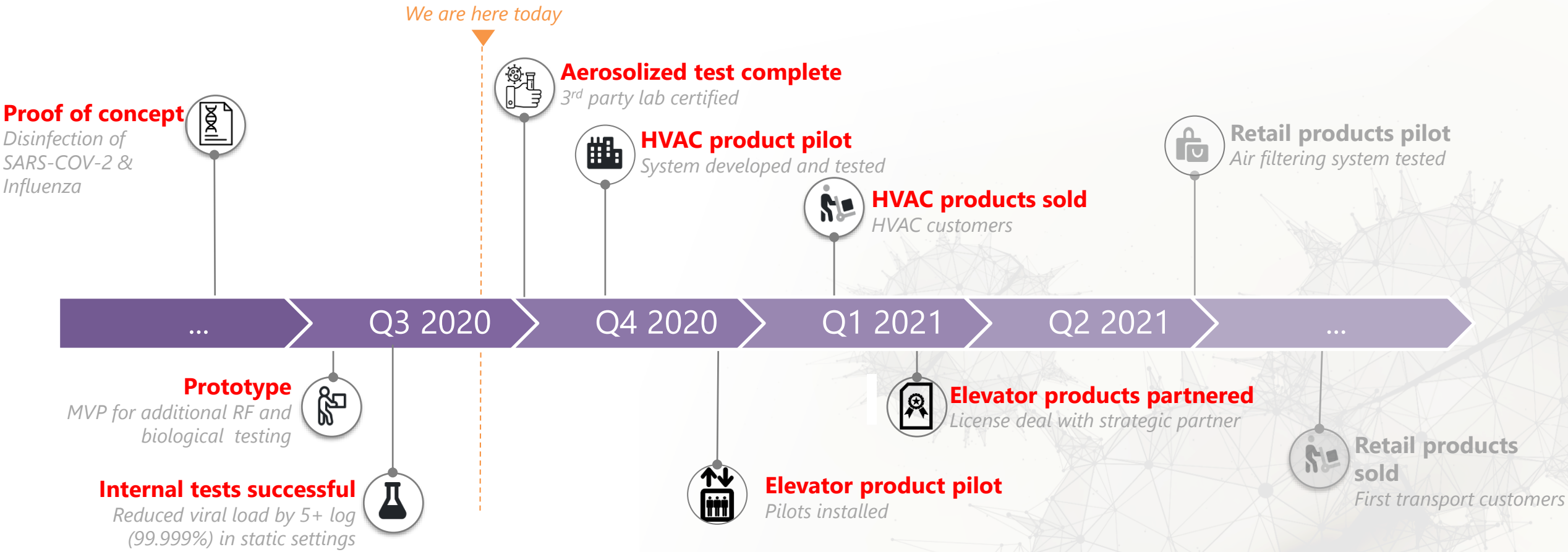
Prior to final handover of merchandise, items are disinfected again for the consumer as part of the new process

Behind the scenes

Keeping employees healthy and safe by disinfecting incoming & outgoing items as well as wholesale samples

Timeline and Milestones

As of September 2020, RESONŌ has completed 90% of system development, and is looking to establish launch partnerships for go to market



Product development/launches are not interdependent, could be prioritized or parallel processed with more resources

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