



COVID solutions

BIRAC supported In-Market Products from STARTUPS

March 2020

20_BIRAC Supported In-Market Startup Products as COVID-19 solutions

S. No.	Name of Start-up	Name of Founder	Category	Name of Technology/ Product	Market Status	Support Needed
1	PathShodh Healthcare Pvt. Ltd.	Prof. Navakant Bhat	Assistive (Monitoring Medical Device)	AnuPath™: Point of Care Hand Held Multi-Analyte Diagnostic Device		
	Monitoring COVID-19 patients in the ICU and hospitals: <ul style="list-style-type: none"> Increased viral load in the COVID patient show decreased concentration of Serum albumin and Hb (reference: <i>Clin Chem Lab Med Feb 2020; Science China March 2020; Lancet Preprint March 2020</i>). It is important to periodically monitor these markers for COVID-19 patients, instantly during ICU treatment. AnuPath™ in ICU setting can yield immediate results for Serum Albumin, Hb and also offer additional parameters like HCT, MCV, MCH, MCHC, PCT, MPV parameters facilitating CBC (complete blood count). Comprehensive IEC certification for safety and EMI/EMC, enabling its use for hospital settings. 				Cost: INR 50,000 Units sold: 45	<ul style="list-style-type: none"> PathShodh can immediately supply the handheld device and test strips to any hospital for use in ICU or otherwise.



AnuPath™: Point of Care Hand Held Multi-Analyte Diagnostic Device

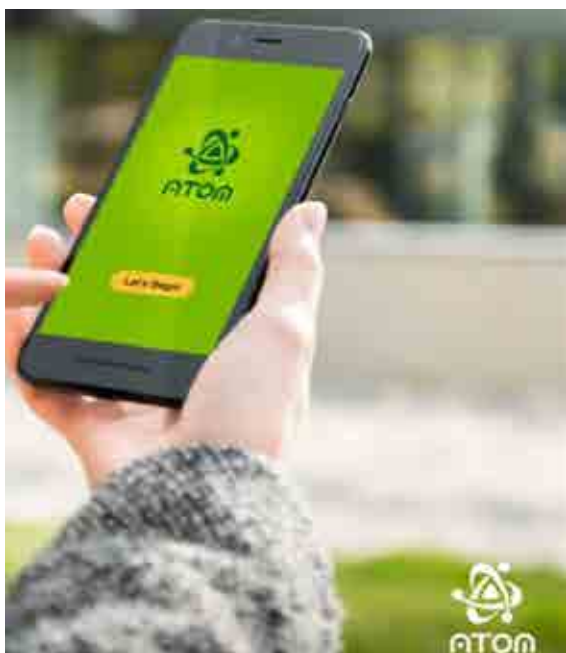
(PathShodh Healthcare Pvt. Ltd.)

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2	Cardea Biomedical Technologies Pvt. Ltd.	Abhinav	Assistive (Monitoring Medical Device)	ATOM: Accurate TeleECG On Mobile	Market Status	Support Needed
	<p>Heart Patients are more prone to the Corona virus disease severity. During treatment of Covid19 patients with hydroxychloroquine-azithromycin, it is essential to:</p> <ul style="list-style-type: none"> • Perform ECG and calculate QTc evaluation • Avoidance of non-essential QT-prolonging medications • Identifying and correcting electrolyte imbalances (potassium, magnesium, calcium) <p>In addition, co-morbidities that may increase the risks include acute kidney injury or liver disease. Source - ICMR, WHO, AHA (March 2020)</p> <p>ATOM ECG allows capture of a medical grade 12 lead ECG over a smartphone with immediate remote expert consultation.</p> <p>It empowers doctors, health workers and nurses to perform treatment of Covid19 patients with confidence.</p>				<p>Cost:</p> <ul style="list-style-type: none"> • Upto 50 units: USD 799/unit+ shipping <i>(Includes 1 month of free medical grade ECG analysis for a max 50 analysis per unit. Cost includes taxes).</i> • For 100 units and its multiple – USD 759/unit + shipping <i>(Includes 3 months of free medical grade ECG analysis for a max 150</i> 	<p>Funding:</p> <p>Rs 5.1 Cr to manufacture and supply approx.</p> <p>1000+ units for pan India usage.</p>

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	<p>The recorded ECG can be instantly sent to a cardiologist for his expertise before administering the drugs and also continue a follow-up during the course of the treatment.</p>	<p><i>analysis per unit. Cost includes taxes).</i></p>	
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ATOM: Accurate TeleECG On Mobile

(Cardea Biomedical Technologies Pvt. Ltd.)

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3	Ayu Devices Pvt. Ltd.	Adarsha K.	Assistive (Monitoring Medical Device)	AyuSynk: Smart Stethoscope	Market Status	Support Needed
	<p>AyuSynk/AyuLynk: Digital Stethoscope for COVID 19</p> <p>Biocontainment presents a unique challenge for auscultation (listening to the lung sound)</p> <p><i>With personal protective equipment (PPE) in treating patients for the coronavirus, how does the clinician place stethoscope eartips in the ears for listening?</i></p> <ul style="list-style-type: none"> • Auscultation at the bedside using a conventional style stethoscope with tubing becomes impossible <p><u>Solution:</u></p> <p>AyuSynk's unique stethoscope design allows healthcare workers to perform auscultation while being protected in an isolation environment and can be used with protective covers in the ED to reduce contamination when pre-screening admissions</p> <ul style="list-style-type: none"> • AyuSynk can be used directly using earbuds or headphones, via bluetooth within the isolation room or to a consultant outside the room or send sounds via email or instant Messaging 				<p>Cost: INR 16000</p> <p>Units sold: 1000+</p>	<p>Need Funds for scaleup:</p> <p>We have planned for manufacturing 100 units. However, to scaleup, we need funds for procuring the components.</p> <p>b. Logistics support: We are getting orders from all over India, however, we are not able to ship devices due to lockdown. If any priority shipping is provided we will be able to send devices all over the country.</p> <p>c. Manufacturing scaleup support to cater to a larger need we need to scale up our manufacturing.</p>

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	<p><u>Additional Products in 3 – 6 development that are relevant for COVID-19:</u></p> <ol style="list-style-type: none"> 1. Digital stethoscope that can record in the device without using mobile. Planned to launch in 6 months. Additional fund support can expedite to 3 months. 2. Analytics to identify abnormal lung sounds such as crackle and wheeze to monitor COVID-19 pneumonia. In the development phase. We will be able to launch in 3 months if we expedite. We need additional funding to expedite. 		
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AyuSynk: Smart Stethoscope

(Ayu Devices Pvt. Ltd.)



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4	Incredible Devices Pvt. Ltd.	Vikram Goel	Assistive (Sterilization for reuse of Medical Device)	CRS- Catheter Reprocessing System	Market Status	Support Needed
	Challenges amid Coronavirus Pandemic: <ul style="list-style-type: none"> Shortage of medical devices at hospitals may happen due to lack of imports, logistics issues impacting manufacturing supply chain world-wide. Manual reprocessing of medical devices shall lead to higher rate of spread of infections, risking both patients and hospital staff. <p>Solution:</p> <ul style="list-style-type: none"> Use of CRS – Catheter Reprocessing System CRS ensures safe reprocessing of catheters and a variety of essential medical devices. CRS is an automated system that safely reprocesses medical devices with minimal human intervention thereby ensuring doctor patients safety. CRS shall help meet the demand of limited medical devices. 				<p>Cost: INR 5-10L/ unit (CRS comes in multiple variants and cost varies depending upon capacity and features)</p> <p>Sold: Orders are in process</p>	<ul style="list-style-type: none"> Regulatory support from the government. Funds for manufacturing.



CRS- Catheter Reprocessing System

(Incredible Devices Pvt. Ltd.)

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5	Turtle Shell Technologies Pvt. Ltd.	Mudit Dandwate	Assistive (Monitoring Medical Device)	Dozee	Market Status	Support Needed
	<p>Dozee converts any bed into a step-down ICU like continuous health monitor in less than 2 minutes of set-up.</p> <p>It provides the data of the entire ward on a single screen from where patients' health can be easily managed and early distress signs can be caught. All this from a safe-distance without risking the chances of infection for the healthcare staff.</p> <p>Features include:</p> <ul style="list-style-type: none"> • Contact-free (Placed under the mattress of the user) • Remote Access • Custom distress alerts with SMS & Email Support • As accurate* as ECG, Echo-cardiography & RIP bands • Pulse oximeter (<i>optional, requires extra accessory</i>) • CE Approved <p>Our algorithms detect the following health parameters from the raw ballistocardiography (BCG) data captured from under the mattress of a user:</p> <ul style="list-style-type: none"> • Heart Rate • Respiratory Rate • Snoring events • Body movements and restlessness • Sleep stages • Sleep Quality 				<p>Cost: INR 7200</p> <p>Units sold: 2500+</p> <p>Dozee in Rajasthan Barah PHC set-up isolation ward with 24x7 monitoring.</p> <p>Aashiyana Living to keep a continuous health check on their 23 high risk inmates.</p> <p>Dozee in Bangalore – Free proactive care for the quarantined & vulnerable population</p>	Regulatory guidance from CDSCO for Commercializing DOZEE.

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	<ul style="list-style-type: none"> ● Stress, Recovery and Heart rate variability parameters <p>Directive 2011/65/EU: EN 50581 2012 and it is CE and RoHS Compliant</p> <p>Ability to flag early signs of respiratory and cardiac distress</p>	<p>Starting March 15th, we started as campaign utilizing Duroflex's CSR funds to provide our devices to give proactive care to 200 home quarantined and people in vulnerable category (diabetic, elderly, cancer patients, COPD patients) at no cost.</p>	
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Dozee

(Turtle Shell Technologies Pvt. Ltd.)

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6	Sattava Medtech	Vibhav Joshi	Assistive (Monitoring Medical Device)	Fetal Lite: Fetal Heart Rate Monitor for Women in Labor	Market Status	Support Needed
	<p>Expecting mothers and babies are vulnerable populations during the Covid-19 pandemic. It is highly risky for mothers to go to hospitals as there is a risk for infection. Only high risk mothers are being asked to come to hospitals while other mothers are finding midwives/ home delivery options.</p> <p>The right monitoring equipment is not available for mothers at home. Conventional monitoring equipment is not designed to be used at home as it needs a skilled operator, infrastructure and is not portable. This can lead to higher number of fetal distress cases not being detected, and maternal and fetal mortality during home births.</p> <p>How can Fetal Lite help? The Fetal Lite has been designed for home use by low skill operators, in extreme scenarios - mothers or family members can easily perform scans. The Fetal Lite also has a remote monitoring capability - which can allow Obgyns to remotely receive scan reports and identify high-risk mothers who need to visit the hospital. Even under normal delivery,</p>				<p>Units sold: 10</p> <p>Over 1000 mothers have been monitored using the Fetal Lite device in the last 3 years.</p>	<p>Funds to scale the home monitoring platform.</p>

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	<p>monitoring is important. Home monitoring will reduce the number of hospital visits needed.</p> <p>Fetal Lite is CE Class 2A certified.</p> <p>Commercially available. Piloted with Taverkere health care center under the Bangalore municipal corporation, Aster DM group of hospitals, Narayana Healthcare. Remote doctor dashboard and doctor notification application have also been deployed.</p>		
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**Fetal Lite: Fetal Heart Rate Monitor
for Women in Labor**

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7	Jeevtronics Pvt. Ltd.	Ashish Gawade	Assistive (Medical Device)	Hand Cranked Defibrillator for Sudden Cardiac Arrest	Market Status	Support Needed
	<p>Recent case report on 138 hospitalized COVID-19 patients shows. 16.7% of patients developed arrhythmia and 7.2% experienced acute cardiac injury, in addition to other COVID-19 related complications (https://www.dicardiology.com/article/acc-covid-19-clinical-guidance-cardiovascular-care-team)</p> <p>“SanMitra 1000 HCT” Defibrillator is particularly useful for disaster struck situations (eg, COVID 19). Sequestration areas inside hospitals for Corona victims need lots of defibrillators.</p> <p>Battery-less, Reliable.</p> <p>For city hospitals, it saves them the cost of battery replacement (usually Rs 12,000 to Rs 35,000 per year).</p> <p>Patents (1 granted US patent, 1 Indian design registration, 1 Indian patents filed, more patents in the pipeline).</p> <p>Jeevtronics is an ISO13485 certified company.</p> <p>It is designed to international IEC standards for medical devices and has been tested and approved by the NABL accredited lab.</p> <p>It has been tested for 16,000 charge- discharge cycles thereby making it super long life world class product.</p>				<p>Sold: 64 defibrillators sold till March 19th, 2020.</p> <p>50+ enquiries from various hospitals.</p> <p>Cost: INR 89,000 + GST 12%= Rs 99,680</p>	<p>Seeking support for scaling up and looks forward to government entities, CSR donors and potential investors to help scale this mission urgently.</p>

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	<p>We have 64+ products deployed in Maharashtra, Gujarat, Chhattisgarh, Tamil Nadu, Rajasthan and Karnataka.</p> <p>If this product is deployed across all government PHC, CHC, District hospitals and ambulances, it could drastically save lives across India.</p>		
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Hand Cranked Defibrillator for Sudden Cardiac Arrest

(Jeevtronics Pvt. Ltd.)

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8	Janitri Innovations	Arun Agarwal	Assistive (Monitoring Medical Device)	JANITRI	Market Status	Support Needed
	<p>DAKSH is an advance intrapartum monitoring tool for an automated partograph generation.</p> <p>DAKSH allows the staff nurse to register and enter vital signs of a pregnant woman. It reminds the staff nurse to monitor the labor vitals, as per the standard WHO intrapartum protocol. It also generates alerts in case of complications, based on an in-built algorithm. The doctor at a remote location can also view the live labor progress and guide the staff nurse.</p> <p>DAKSH's role in COVID-19</p> <p>During the labor phase, women visit hospitals and get admitted for at least 48 hours. They are <u>exposed to the risk of COVID-19</u>. Doctors visit them frequently which increases contact and SBAs (Skilled Birth Attendants) are assigned to labor rooms also in constant contact. In this unfortunate situation of Corona spread, the work burden has increased, and management of patients is required.</p> <p>Because of COVID the hospitals are facing various problems, Medical professionals and patient's safety is compromised, management of suspected patients by doctors, multiple patients load, physical documents. With DAKSH, these problems can be taken care of:</p> <p>1. Remote monitoring: The doctors can guide the nurses without visiting them. The progress of labor can be seen by the doctor remotely.</p>				<p>Monitored 29,270 deliveries</p> <p>115+ hospitals</p> <p>Rajasthan, Karnataka, Delhi, Arunachal Pradesh, Meghalaya, Chhattisgarh, Maharashtra, and West Bengal.</p> <p>Cost: Available on request</p> <p>Units Sold: Daksh: 115</p> <p>KEYAR with DAKSH: 15</p> <p>In the present situation, we will be</p>	<p>Outreach to maximum private and government hospitals.</p> <p>We have the capacity to enroll the hospital remotely and we can provide training remotely.</p> <p>We need help in awareness, so hospitals and relevant stakeholders can get to know about this.</p>

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	<p>2. Patient Management: Multiple patients will be seen on one screen, audio and critical alerts will be given based on the complications and reminders for the measurement of vitals.</p> <p>3. Digital Documents: This is a paperless system, automated partographs are generated and case sheets will be maintained digitally. This means less contact and less exposure. This also gives unlimited cloud storage.</p>	<p>providing DAKSH free for next 3 months, so the relevant stakeholders may use it to minimize the risk.</p>	
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JANITRI

(Janitri Innovations)

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9	Predible Health Pvt. Ltd.	Suthirth Vaidya	Assistive (Monitoring Medical Device)	LungIQ: Precision Insights from Lung CTs	Market Status	Support Needed
	LungIQ: Applied AI on Radiology Imaging for Monitoring Severity of COVID-19 Patients Proposed solution is a two-step product with following steps: <ul style="list-style-type: none"> • Artificial Intelligence powered solution that quantifies patterns in lung computed tomographic imaging, providing quantitative metrics on the % of lungs affected with texture changes across a broad spectrum (from ground glass to consolidation) • Centralized repository which collects clinical features, radiology imaging and patient outcome data to help public health authorities and hospitals with a data-driven analysis of patient prognostication Readiness of Technology: LungIQ has been developed using over 10,000 CTs over the last 1 year with use-case of pulmonary fibrotic diseases. The findings of COVID19 are very similar to that of other infectious and inflammatory diseases and hence we are in a unique position with a ready-to-use product in the fight against COVID19 pandemic. For radiologists, LungIQ can help detect and quantify findings better in routine practice. LungIQ is also available as a joint solution with teleradiology for end to end reading				The product is being tested on COVID with sites in Philippines & with individual hospitals in India.  	Outreach to hospitals for deployment

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10	Weinnovate Biosolutions Pvt. Ltd.	Dr. Milind Choudhary	Preventive (Sanitizer, Disinfectant)	Nano Technology AgCide	Market Status	Support Needed
	<p>A non-alcoholic aqueous based Colloidal Silver solution uniquely made from its NanoAgCide™ technology for disinfecting hands and environmental surfaces.</p> <p>Silver nanoparticles have antiviral efficacy against many viruses viz. HIV, Hepatitis B, Herpes simplex virus, Influenza virus etc. Recent reports have suggested the role of GSH capped-Ag2S NCs (Silver nanoclusters) in inhibiting the proliferation of Coronavirus by inhibiting the synthesis of viral negative strand RNA and viral budding. Ag NP-based materials will be able to prevent the contact infection of health care workers (HCWs), besides preventing patient infection. Thus colloidal silver can affects Covid -19:</p> <ol style="list-style-type: none"> 1) Spread by blocking the RNA replication 2) Infectivity by blocking the surface glycoproteins <p>Synthesized from Green technology, free from hazardous chemicals and has no risk of flammability compared to alcohol based disinfectants.</p> <p>Patent filed for process of making of colloidal silver.</p> <p>Test license for making hand sanitisers and disinfectants has been granted.</p> <p>Manufacturing license awaited.</p> <p>Aims to manufacture 200 litres or more of colloidal silver solution per day with our manufacturing set up to cater the demand of hand sanitization and disinfection.</p>				<p>Cost: Silvoclean:</p> <p>INR 450 for a 500ML bottle</p> <p>Units sold: Preorders available</p>	<p>Scale up and deployment</p>
						

Nano AgCide Technology

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11	Nanoclean Global Pvt. Ltd.	Tushar Vyas	Preventive (Nasal Masks)	Nasofilters, NasoMask	Market Status	Support Needed
	<p>The company leads in the production of the most affordable bio-safe nanofibers with its proprietary polymer technology. It is the first to commercialize bio safe nanofiber-based products in India.</p> <p>The first product Nasofilters, is the first-ever non inserted, hypoallergenic and self-adhering nanotechnology-based respiratory disposable nasal filters, which sticks to the user's nasal orifice, unlike traditional surgical masks which cover the half of the face and produces discomfort while wearing.</p> <p>The company is selling other products also like Nasomask (Pollution mask), and G3 and F7 grade industrial filters along with Nasofilter.</p> <p>Filter media in the product offers novel features like extremely high efficiency at low-pressure drop giving rise to high value of filter quality as compared to the commercially available filter media. Additionally, it is made up of natural materials, which are non-irritant, bio-compatible & biodegradable. The current product provides filtration of not only 2.5pm aerosols but also to bacteria, viral infections, and pollen allergies at cost five times lower than existing competing products (Global Nasal Filter Report 2017).</p>				<p>Cost:</p> <p>1) Nasofilters: INR 10 per piece</p> <p>2) Nasomask: INR 50 per piece</p> <p>3) Pollution net: INR 200 per sq ft</p> <p>4) Nanoclean AC filters: INR 399 per piece</p> <p>5) HVAC Filters: INR 150 per sq meter</p> <p>Units sold: 5.1 lakh in over 22 countries</p>	Outreach for scaling



Nasofilters

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12	Windmill Health Technologies Pvt. Ltd.	Dr. Avijit Bansal	Assistive (Medical Device)	NeoBreathe Easy to Use Pedal Operated Infant Resusciator	Market Status	Support Needed
	<p>NeoBreathe Pedal Operated Infant Resusciator:</p> <p>It delivers artificial breaths to newborn babies that fail to breathe. It reduces leakage by half and improves ventilation by 20%.</p> <p>For COVID it offers following features:</p> <p>A) REDUCED INFECTION RISK</p> <ul style="list-style-type: none"> - Increases the physical distance between patient and operator (for BMV, operator must be very close) - Exhaled air can be routed through a filter (with BMV, infected exhaled air is released freely into the surroundings) <p>B) SUPERIOR VENTILATION</p> <ul style="list-style-type: none"> - Shows PIP in real time giving feedback on performance and lung condition - Stronger in-built protection against excessive pressures (Pressure-safety) - Settable PIP. Doctors can preset the specific Peak Insp. Pressure to be delivered with each breath. <p>D) GREATER COMFORT</p>				<p>NeoBreathe can be deployed as it is wherever infant patients are expected to be treated.</p> <p>Cost:</p> <p>Available on request</p> <p>Units sold: 200+ in India and Africa</p>	<p>For modified form (proposed model): Funding requested for upgradation/development of ventilator</p>

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	<p>- By freeing both hands and employing highly ergonomic foot pedal, NeoBreathe increases the comfort of operation while BMV requires a patently uncomfortable, hunched-over position - causing fatigue and risk of failure</p>		
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NeoBreathe: Pedal Operated Infant Resusciator

(Windmill Health Technologies Pvt. Ltd.)

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13	Periwinkle Technologies Pvt. Ltd.	Veena Motkali	Assistive (Monitoring solution)	Net4Medix: Telemedicine Platform	Market Status	Support Needed
	<p>A cloud-based system with apps on Android, iOS and web for patients and their healthcare providers. It is a multi-specialty system intended to be used by doctors/caregivers to receive diagnostic data from the patients and provide related consultation even remotely.</p> <p>Primary Goal Pandemic Monitoring: Enable effective management of positive patients / suspect positive patients of COVID-19</p> <p>Provide a pre-determined level of remote support to non-COVID-19 patients who need medical assistance</p> <p>Intended Users:</p> <ul style="list-style-type: none"> –Auxiliary & Medical Staff Viewing training resources, registering patients, reporting patient status –Leadership Viewing dashboards (for planning & control) –Patients Self-reporting, viewing authentic resources –Service Providers Viewing dashboards (for logistic readiness) <p>Easy-to-Use Functions</p> <ul style="list-style-type: none"> • Monitoring Disease Control Status: Reporting of Infection by health facility, Area-wise Dashboards (numbers, counter measures) • Monitoring Quarantine Facility: Patient Registration at Facility, Reporting, and Dashboards • Staff Training: Repository of Video, Audio, Web Resources • Self-reporting: Direct Status of Home Quarantined Patients as well 				<p>Cost: INR 13,000/ 500 patients (Annual Subscription)</p> <p>Units Sold: 50+</p>	<p>Seeks deployment facilitation in Public Health System</p> <p>State/ Centre level</p>

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	<p>Secondary goal Self-reporting and remote consultation to non-COVID-19 patients who need medical assistance e.g., –NCD patients (diabetic, cardiovascular, hypertension, cancer, thyroid/endocrine issues), Pregnant women, Post-operative, Geriatric, Paediatric, Blood disorders, etc.</p> <p>Strengths: Supported more than 10,000 patients so far</p> <ul style="list-style-type: none"> • Machine learning (Artificial Intelligence) models available for diagnostic assistance and insights • Real-life example of prior use: Smart Scope® CX automated test • Connects other diagnostic devices for remote data collection • Easy to add any specialty for faster go-live with minimal change • Collaborative work with partner labs and other healthcare service providers • Excellent experience working with public healthcare setups with more than 70 installations - have service partners in all regions in India 		
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Net4Medix: Telemedicine Platform

(Periwinkle Technologies Pvt. Ltd.)

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14	Accuster Technologies Pvt. Ltd.	Amit Bhatnagar	Preventive (Diagnostic solutions)	Portable Mobile Lab and La-bike	Compact Lab (PCML)	Market Status	Support Needed
	<p><i>Since day of first Corona reported patient in India, their mobile labs have been operating in different locations in Delhi conducting pathological tests to provide confidence in people who are in state of panic due to the spread of this disease.</i></p> <p>1. MOBILE LAB is a Compact Portable Clinical Laboratory with an open system <u>in a suitcase</u> having Power Back- Up of 4 hours extendable to 24 hours. This Lab can work not only in the cities but in villages and remote locations too.</p> <p>Distinctive features of Portable Mobile Lab.</p> <ul style="list-style-type: none"> • This lab is very rugged and maintenance free as all components of the Lab have their proper and predefined place. It can easily work at any temperature from 0 degrees C -50 degrees C. • Less power consumption • Blood collection cost reduced, as tests performed on the spot • Requires a small space to set up • Satellite control to provide information about tests conducted and even switch on/off from a remote location • Bluetooth and GPRS tracking: Locations of the lab can be known and transfer of data can be done from Analyzer to Laptop computers • Instant reporting at the testing site. 					<p>Mobile Lab: Full Capex cost including GST: INR 4.36 lakh</p> <p>La-bike with bike: Full Capex cost including GST: INR 6.95 lakhs ,</p> <p>For both revenue sharing model (Less capex and opex combination are available)</p> <p>Units Sold: 1500+</p> <p>Minister of State for Health & Family Welfare - Shri Ahwini Kumar Chaubey also launched LaBikes - 16 qty for Buxar district of Bihar</p>	Deployment and scale up

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<ul style="list-style-type: none"> • Intimation of Quality Control to the technicians so as to be configure <p>-76 test can be conducted: such as Hematology, Biochemistry, serology, urine, BP, ECG etc.</p> <p>-All desired validation and certifications from recognized institutions for the mobile lab.</p> <p>This will aid in providing treatment to the COVID 19 Patients as during treatment, basic parameters of vital organs need to be diagnosed & recorded before taking up any new treatments /surgeries/medicines. This Mobile Lab will be very useful in the emergency hospital set ups & disaster Relief set ups prepared to deal with COVID 19 Emergency. If the lab is available with the doctors, timely treatment will be available and would save many lives. No patient will be left out without treatment just because of the lack of its diagnostics report.</p> <p>LaBikes may travel from 1 emergency center to other center or nearby hospital where lab facilities are needed the most.</p>		
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Portable Compact Mobile Lab (PCML) and La-bike

(Accuster Technologies Pvt. Ltd.)

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15	Neurosynaptic Communications Pvt. Ltd.	Sameer Sawarkar	Preventive (Diagnostic solution)	ReMeDi Digital Solutions	NOVA™ Health	Market Status	Support Needed
	<p>ReMeDi® SCAN-CORONA, jointly developed by e-Zest Solutions Ltd. and Neurosynaptic Communications Pvt. Ltd is a combination of set of medical devices and software applications.</p> <p>1 ReMeDi® CORONA Screening Application for Self-Use by Individuals: This Application can be downloaded by any individual, and a Risk Assessment for infection can be obtained by filling up details like travel history, contact history and symptoms. Further, this screening can be taken by an individual often to check the updates in the Risk Assessment. High risk would prompt the individual to immediately visit a hospital. The location of individual is also tagged with his / her consent.</p> <p>2. ReMeDi® CORONA Screening Kit for Health Workers / Nurses: This Screening Application is similar to the above, but to be used by Health Workers or Nurses for mass screening. The Health Worker / Nurse fill up the details for the patients. This Kit includes a Tablet and IR Thermometer, as well as a Rapid Test Kit (lateral flow assay) for the Corona Suspects, and BP, SPO2 for other patients, who might need care, but are not corona suspects. This is ideal for Hospitals or NGOs to carry out screenings at a large scale. There is a bridge available for Teleconsultation for non-Corona Patients who have been indicated as medium or low risk, as they may need consultation.</p> <p>3. ReMeDi® CORONA Consult: Direct-to-Home or Clinic Tele-Consultation:</p>					<p>Cost: INR 2.5-3 Lakhs</p> <p><i>(The cost is divided in the following parts:</i> 1) Sale (and AMC) for the medical devices 2) Pay-per-use for the software (SaaS) in usage slabs and 3) Consumables for various diagnostic tests on a need basis 4) There are other components like training, installation, etc. that are provided and charged for on a need basis)</p> <p>Units Sold: 100+</p>	<p>Rolling out on mass scale, including the Screening App, Screening Kit and Telemedicine Direct-to-Home from hospitals.</p> <p>Funds to immediately start manufacturing these indigenous kits and supplying on the large scale.</p> <p>Software can start rolling out almost immediately. Funds would be required for providing these to as many hospitals in the country as possible.</p>

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	<p>This is an Application which can provide Tele-consultation to either the person assisted by a Health Worker at the mass screening location, or Directly to the masses, from their respective locations, either through a Web Based application on a Laptop, or a Downloadable App on the Android Smartphone. The nearest hospital, which has set up a Teleconsultation Hub with Doctors. This is an ideal mechanism presently to offer healthcare services to a large number of patients, who do not wish to visit the hospitals due to scare of infection, and for the hospitals as they may be too loaded to receive the patients.</p>		
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ReMeDi NOVA™ Digital Health Solutions

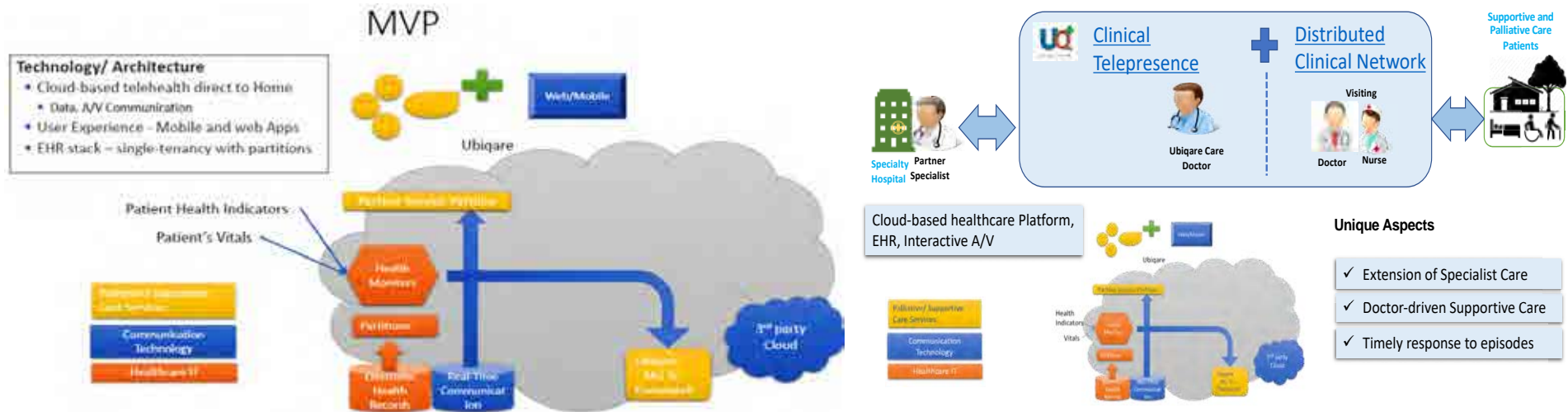
(Neurosynaptic Communications Pvt. Ltd.)

20_BIRAC Supported In-Market Startup Products as COVID-19 solutions

16	Ubiqare Health Pvt. Ltd.	Prasanna Limaye	Assistive (Medical Device)	Specialty Medical Supportive/Palliative Care to Patients at Home	Market Status	Support Needed
	<p>Ubiqare enables doctor-driven specialty care to patients at home, reducing hospital visits and stays.</p> <p>The Ubiqare solution seamlessly combines clinical telepresence technology, collaboration framework, and last mile clinical network of doctors, nurses, therapists and phlebotomists.</p> <p>Covid-19 patients at home, under care from Ubiqare, will get:</p> <ul style="list-style-type: none"> • Extension of care of Pulmonologist/ Physician and interactive clinical telepresence • Regular Monitoring by IoT enabled medical devices with cloud-based analytics on EHR • Analytics-Assisted Triaging and Tele-Consultation by Ubiqare Doctor/ Pulmonologist/ Physician • Sample collection or interventions by the last mile clinical network/ healthcare workers. <p>The patients can be cared for at home during most of the illness trajectory - from the Asymptomatic stage to Mild Symptoms to Moderate Symptoms stage. This enables the hospital infrastructure to be leveraged for only those in the stage of Severe Symptoms.</p> <p>In the Asymptomatic stage and Mild Symptoms stage, the patients' health will be self-monitored, and the data uploaded to the cloud for analysis by an algorithm. This analysis will be reviewed by the care doctor. Interventions for collecting lab samples</p>				<p>Cost: Subscription Range from Rs. 15,000 to Rs 20,000 per month</p> <p>Served 110+ patients at home,</p> <p>Delivered 6200 patient-days of supportive medical care, for serious illnesses like cancer, stroke, MS, cerebral palsy, orthopedic and few others.</p> <p>96% of the clinical episodes were managed at home, avoiding as many readmissions.</p>	<p>Development Support for implementing the necessary changes within a short time.</p> <p>Clinical alignments:</p> <p>Close collaboration with telehealth-friendly and empowered physicians/ pulmonologists.</p> <p>Logistics of access to the last mile healthcare workers in remote places</p> <p>Development grant:</p> <p>Financial support Rs 15 Lakhs in accelerating the development roadmap. Features needed are:</p> <ul style="list-style-type: none"> • Integrating IoT-capability for clinical monitoring devices

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<p>for testing will be supported. Non-compliance to care protocols during quarantine will be detected and alerted. During this stage monitoring of family members will also be covered.</p> <p>For patients in Moderate stage, Ubiqare will support with interventions for respiratory distress at home and supervised by the Care doctor over the telepresence platform.</p> <p>For those with Severe symptoms or patients with epidemiological risks Ubiqare will support in shifting them to hospital under specialists' care.</p>	<ul style="list-style-type: none"> •Analytics for first-level triaging and alerts •Community level aggregation of data •Support for Care Compliance (including quarantine protocol)
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Specialty Medical Supportive/Palliative Care to Patients at Home

(Ubiqare Health Pvt. Ltd.)

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17	Coeo Labs	Nitesh Jangir	Assistive (Ventilator aid)	VapCare: Automated Secretion Management and Oral Hygiene System for Ventilated Patients	Market Status	Support Needed
	<p>An analysis on data from Wuhan, published in Lancet medical journal, suggests that 50% of the deaths in COVID 19 patients had secondary infections acquired in the ICU, with 30% of deaths due to ventilator associated pneumonia (VAP). VAP is a serious infection in ventilated patients and is highly fatal in COVID 19 patients who are dealing with pneumonia. VAP happens because of aspirations of contaminated secretion to the lungs. The current standard of care is for an ICU nurse to manually remove such secretions from the oral cavity and the airway. This puts nurses and caregivers at risk due to exposure to oral fluids- this risk is magnified with COVID patients</p> <p>VapCare is an automated secretion management and oral hygiene system for ICU patients on mechanical ventilation. VAPCare provides a completely closed system for intelligent and accurate removal of saliva and secretions in a ventilated patient- without any risk of exposure of the nurse to these secretions. VAPCare also significantly reduces the nursing burden by automating a key nursing step in the management of ventilated patients- which will also be critical in the impending shortages of nursing staff with increased ICU admissions for COVID.</p> <p>In the context of the current Covid-19 crisis, VAPCare brings three unique benefits to healthcare systems:</p> <ol style="list-style-type: none"> 1) Provide effective secretion clearance and oral hygiene management in ventilated patients with limited nursing staff- and reduce VAP in these patients 				<p>Cost: Available on request</p> <p>Units sold: 10 and 400 disposables.</p>	<p>Deployment in Private and Public Hospitals</p> <p>Funding for manufacturing and scale up</p>

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<p>2) Prevent cross infection of nurses and healthcare workers from COVID patients- thereby increasing caregiver safety</p> <p>3) Free up critical nursing time by automating a frequent and laborious process</p> <p>This 1.5 minute video provides a brief overview of the product: https://www.youtube.com/watch?v=3-dbCB6EE1M&t=9s</p> <p>This 12 minute video goes through the details of device setup and use: https://www.youtube.com/watch?v=p4n9uCjdlpQ&t=499s</p> <p>VapCare is a proprietary product with its core technology protected by patents granted globally. The device has shown safety and efficacy data in a 30-patient, first in man trial - with ~250 ml of secretions collected daily, and no adverse events or cases of VAP. A two-arm trial is currently underway at Narayana Hrudayalaya, Bangalore.</p> <p>Product is US FDA registered and European CE certification audit has been completed.</p>		
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VapCare: Automated Secretion Management and Oral Hygiene System for Ventilated Patients

(Coeo Labs)

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18	Nemocare Wellness Pvt. Ltd.	Manoj Sanker	Assistive (Monitoring device)	Nemocare	Market Status	Support Needed
	<p>Continuous monitoring wearable device that will aid in remote monitoring of vitals along with geolocation and prognosis of affected and quarantined patients. It will also aid in tracking their symptoms and the doctors will be alerted on detection of deterioration.</p> <p>We will also be able to understand the disease itself by monitoring positive cases and will help biopharma companies and academic institutes that are developing therapies by helping understand the efficacy and effectiveness on candidates.</p> <p>The details are at: https://drive.google.com/file/d/1xHFvj03bsm0aulQl2EKkASCuvv-50-xJ/view?usp=sharing</p> <p>Wearable device for remote monitoring of health parameters of confirmed positive cases.</p> <p>Clinical validation for normal use ongoing at Narayana Netralaya with good results.</p> <p>Has been tested on adults and children. Data read on dashboard. It can record sound and play it back for cough analysis.</p>				All vendors in India, not dependent on import.	<p>1-3 months Ready for use.</p> <p>Access required to quarantine site to validate for COVID use.</p>

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Nemocare Raksha Plus

(Nemocare Wellness Pvt. Ltd.)

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19	Niramai	Geetha Manjunath	Preventive (Monitoring Device)	Niramai	Market Status	Support Needed
<p>Automated screening of population to look for likely COVID19 infection by checking for fever plus associated respiratory diseases</p> <ul style="list-style-type: none">• How is this done: Facial Temperature of all people walking into a facility is measured remotely using a thermal camera.• NIRAMAI Computer Vision technique identifies people with suspected fever• Just a simply skilled health worker is sufficient to conduct the test, thus reducing the pressure on clinical testing <p>Other details are at: https://drive.google.com/file/d/1cL8LNwVdpDJCo3kqlq1qdOmruYk43pTf/view?usp=sharing</p> <p>The Solution will be provided by a joint collaboration between 3 startups</p> <p>NIRAMAI Health Analytix Pvt Ltd -http://niramai.com -Thermal Scan Software</p> <p>Vitor Health Private Limited -Lung Function Test</p>					<p>Company seeking fund for up to 25 lakhs to buy 2 thermal cameras and 2 researchers to develop other parameters like LFT etc.</p> <p>Large scale production: Each thermal camera cost 8 lakhs and based on the requirement of the number of units Vs cost.</p>	<p>Stage – Validation (Similar technology that the company developed for breast cancer)</p> <p>6 months (for validation and incorporation of other parameters.</p> <p>Budget – 25 lakhs (Company seeking fund for up to 25 lakhs to buy 2 thermal cameras and 2 researchers to develop other parameters like LFT etc.)</p> <p>4. Bottlenecks – Import cameras from Korea and each camera cost 8 lakhs.</p> <p>Assembling 3 companies’ technology and validation might take little longer time.</p>

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	<p>DITI Medical Thermography Pvt Ltd http://www.thermography.co.in/contact.php -Hardware for Live Thermal Imaging</p>		
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Thermal Scanning for COVID-19

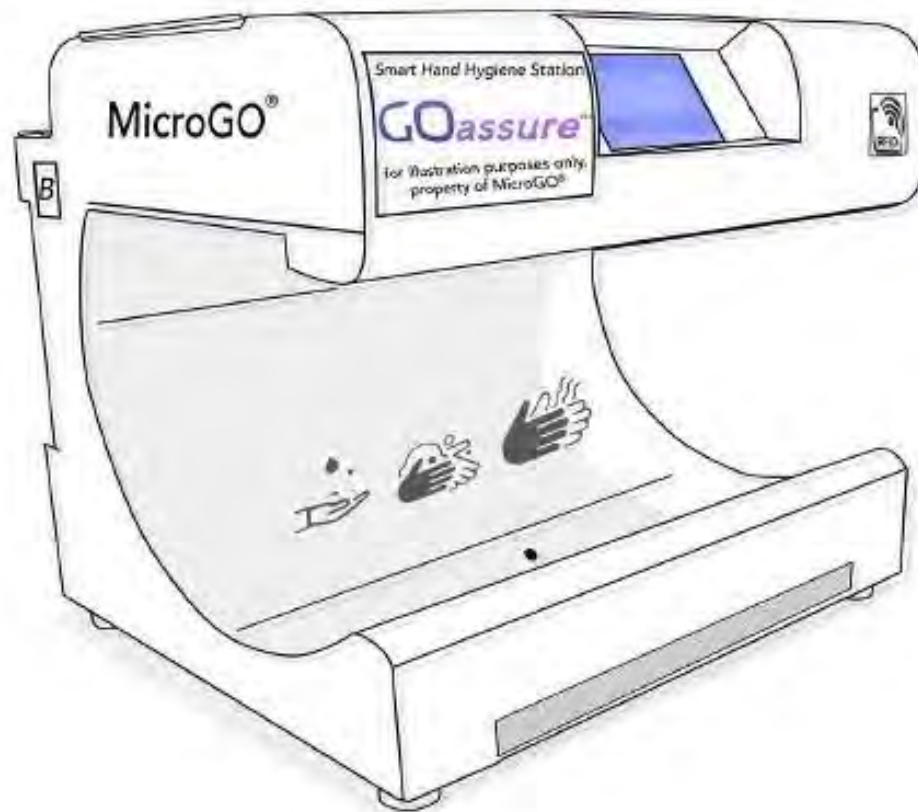
(NIRAMAI Health Analytix Pvt. Ltd.)

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20	MicroGO	Dr. Rachna Dave	Preventive (Sanitizer)	GOassure™	Market Status	Support Needed
	<p>GOassure is IOT enabled fully automated hand hygiene device which digitalises the hand hygiene process.</p> <p>GOassure ensures that the users perform hand hygiene as per the WHO recommended six step of hand hygiene and notify the variation (or non-compliance) to the authorities/health officer/managers.</p> <p>At the time when entire world is fighting against SARS-CoV2 virus infection, effective hand hygiene is one of the most prominent tool we have to control its spread. Considering its importance, MicroGO in collaboration with Airport Authority of India, Chennai have developed an SOP for all the arriving passengers at the International terminal, to perform hand hygiene using GOassure before entering in to the main hall or immigration check.</p> <p>Based on experience gained from Chennai International airport, many airports viz., Chennai domestic airport, Hyderabad, Calicut, Guwahati, Baroda, Pune, Kolkata and Goa have installed GOassure.</p> <p>We are in process of deployment of GOassure at various airport as well.</p> <p>Apart from airports, GOassure has been installed at various public and private spaces like Taj group of hotels, IRCTC kitchens, Farm aggregator Waycool, Banks among others.</p>				<p>Deployed the product at several airports.</p> <p>Ready for scaleup.</p> <p>Need funds for scaleup (75 lakhs - 1 cr).</p> <p>R&D and manufacturing facilities at Chennai.</p>	<p>In Market</p> <p>Already deployed the product at 11 airports</p> <p>Requires financial assistance of INR 1 Cr for scaleup</p>

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<p>We at MicroGO believe in the power of microSWACHHTA. Our motto is “SAFE and SAVE “- Keeping lives “SAFE” (from pathogenic organisms) while “SAVE ” natural resources.</p> <p>In addition to GOassure, we have multiple patent protected product line up for water and surface disinfection / sterilization that we are deploying in the current crisis for public health.</p>		
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GOassure

(MicroGO)

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Please share interest/ queries:

- **CSR funds:**

Mr. Utkarsh Mathur, Business Development Manager, BIRAC

Email: sped3@birac.nic.in

- **Additional technical information/ Connecting with Startups:**

Ms Rashmika Singh, Technology Transfer and Commercialization, BIRAC

Email: sped-5@birac.nic.in

Thanks you for your support. These Startups require Outreach, Manufacturing, Procurement, Scaling, Funding and other facilitations from the Ecosystem Stakeholders at large.

Dr. Manish Diwan, Head – Strategic Partnership and Entrepreneurship Development, BIRAC

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