

BOARD PACKET

MAY 16TH, 2019



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LEE COUNTY MOSQUITO/HYACINTH CONTROL DISTRICTS

REGULAR MEETING

May 16, 2019

AGENDA

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Call to Order- Chairman Brantley will call the meeting to order

Public Comments- Chairman Brantley will open the meeting to the public

Minutes Approval- Chairman Brantley, April meeting minutes

Lee County Health Department Report- Jennifer Roth, Director of Epidemiology will provide an update on vector borne disease activity in Lee County

Consent Agenda Items

- Senecio Mosquito Sex Separator

Agenda Item Report Topics

- Embryo-Riddle spray tank project update, Al Bennett
- Auditor selection process & update in Florida statues

Executive Director Contract Process- HR Director, Ms. Small, contract update

Director's Report- Dr. Hoel will provide an update on recent activities at the Districts

- Aaron Lloyd
- Washington Days
- Facilities and activities update
 - Scheduling of IAEA workshop, 10-12 Sept
 - IAEA offer of paid worker
 - LAMSID ribbon cutting event, Blackstone Preservation

Financial Report- Mr. Baker will review the financial reports with the Board

Adjourn

☐ MOSQUITO ☐ HYACINTH	Lee County Mosquito/Hyacinth Control Districts Agenda Item Report	Meeting Date: 05/16/2019
PURPOSE/ACTION REQUESTED: Approval for the purchase of the Senecio Robotic Sex Sorting & Packaging Module for \$127,000. The purchase price includes the cost of the machine, shipping, and one years annual maintenance and upgrade fees.		
WHAT ACTION ACCOMPLISHES: Revolutionizes the sex sorting process for Sterile Insect Technique (SIT) eliminating the largest bottleneck in the procedure. The loading capabilities of the machine will optimize the output of the procedure.		
MANAGEMENT RECOMMENDATION: ☐ Approve ☐ Dismiss		
BACKGROUND: LCMCD personnel attended the presentation at AMCA in February 2019 and became interested in improving our SIT releases to improve our program. Scenecio has been developing in the recent years advanced technologies in order to industrialize the Mosquito Sterile Insect Technique. Senecio has been widely acknowledged for its innovation, including: Winning the first prize in Artificial Intelligence for Israeli AI startups in March 2019, winning the Innovation Authority Grand Challenge Award in cooperation with the Israeli Prime Minister economic office following an intensive technology due diligence process; winning the 3rd prize in International startup competition award, Life Science track, Shenzhen, China 2017, and awarding a joint USA-Israeli one million dollar project by the BIRD Foundation for Israeli-USA cooperation in 2015. The Senecio team is comprised of experts in aerospace, automation, robotics, and aeronautics, ensuring innovation is in the DNA of the company, demonstrated by the dozens of inventions and its broad patent portfolio. In hopes of a long and mutually beneficial association, Senecio is pleased to submit and provide Lee County MCD with the Senecio Robotic Sex Sorting machine.		



15191 Homestead Road, Lehigh Acres, FL. 33971



Senecio proposal to Lee County Mosquito Control District

Robotic Sex Sorting & Packaging Module

April 08 2019

1. Background

Senecio is pleased to provide Lee County Mosquito Control with a proposal for the leading-edge technology in automatic mosquito Sex Sorting and packaging.

The company has been developing in the recent years advanced technologies in order to industrialize the Mosquito Sterile Insect Technique.

Senecio has been widely acknowledged for its innovation, including: Winning the first prize in Artificial Intelligence for Israeli AI startups in March 2019, winning the Innovation Authority Grand Challenge Award in cooperation with the Israeli Prime Minister economic office following an intensive technology due diligence process; winning the 3rd prize in International startup competition award, Life Science track, Shenzhen, China 2017, and awarding a joint USA-Israeli one million dollar project by the BIRD Foundation for Israeli-USA cooperation in 2015.

The Senecio team is comprised of experts in aerospace, automation, robotics and aeronautics, ensuring innovation is in the DNA of the company, demonstrated by the dozens of inventions and its broad patent portfolio.

In hopes of a long and mutually beneficial association, Senecio is pleased to submit and provide Lee County MCD with the Senecio Robotic Sex Sorting machine.

In this document:

- Pricing section
- SOW (Scope of Work) & deliverables
- Technical
- Appendix: Senecio unique technology, capabilities, and IP.

2. PRICING

Senecio propose a special discounted offering of a flat purchase fee combined with yearly maintenance fee as the following :

1. Special discounted purchase fee of the Senecio Sex Sorting Machine is : \$100,000 USD plus \$9,000 shipping & logistics cost including the installations of the machine in person by one or more experts and familiarizing the technicians with the operations of the technology.
2. Maintenance and upgrades fee: Include software and hardware upgrade versions developed by Senecio, to be updated at no cost by Senecio technical teams. \$18,000 USD per annum starting in September 2019.

Senecio teams shall perform the required work to meet the Lee county MCD requirements correlated with the project phases. If any such changes may be required during the project period in order to meet with the phases performance, Senecio shall make its best efforts in order to meet such requirements.

3. SOW

Senecio provides the Lee County Mosquito Control with the leading-edge technology in terms of mosquito sex separation (see appendix).

Project is defined into multiple phases:

#Phase	Activity name	Description	Estimated date	Estimated Duration
Phase 0	Data set creation	Senecio brings the machine for the purpose of data set creation and adaptations	May/ June 2019	1-2month
Phase 1	Ramp up	250,000 mos/wk	July 2019	3 months
Phase 2	Operational	1,000,000mos/wk	September 2019	12 months

Deliverables:

#Phase	Delivery	Description
Phase 0	Machine	Senecio team adaptation works
Phase 1	Documentation	User manual and training
Phase 2	- Machine loading module - Pre sorting module	- A module to automate loading of release tubes. Together with user manual and training - A semi-automatic presorting module, enabling a continuous high throughput pre-sorting process.

4. Technical

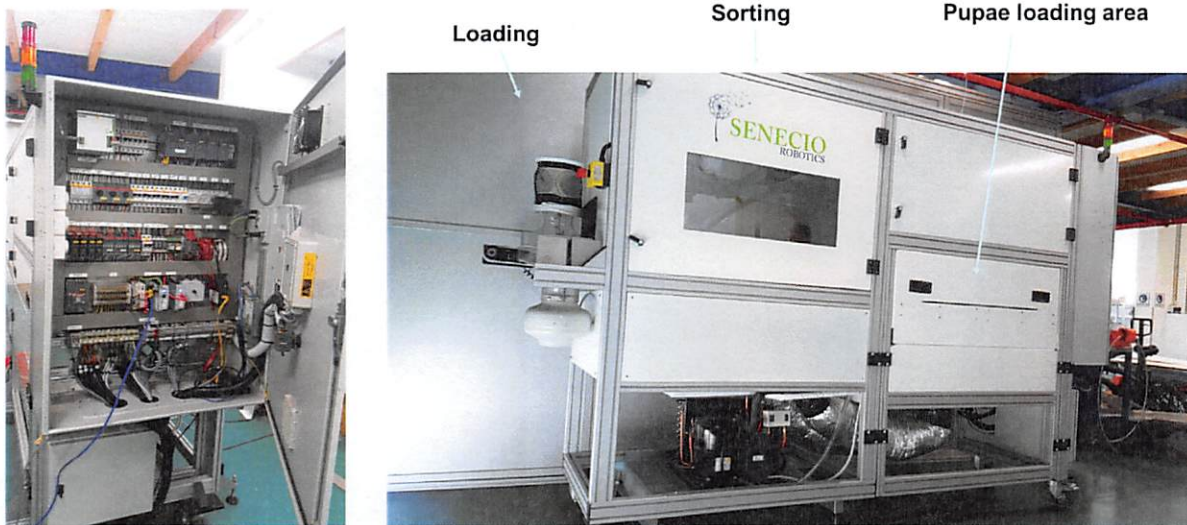
Senecio provides the Lee County the machine shown below.

The machine shall meet with the required performance per each project phase as discussed between the parties

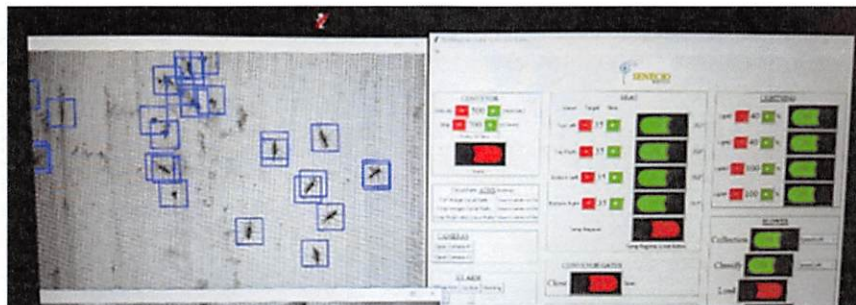
Environmental requirements: Air-conditioned controlled room.

Detailed dimensions, electrical and another data to be coordinated upon shipment.

Machine pictures:



Dashboard:



Phase 1

system performance:

- Process accuracy in female contamination: 99%
- Weekly throughput: 250,000 mosquitoes

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Operational procedure:

1. Technician perform manual presorting targeting at least 90% accuracy.
2. Technician load machine with up to 50K pupae per day, or 250,000/working week.

Loaded pupae are pupae that should be eclosing and emerging same day.

3. Technician to perform weekly basic maintenance procedures as trained by Senecio.

Phase 2**System performance:**

1. Process accuracy in female contamination: 99.7% and above
(note: Senecio expects to achieve higher and higher accuracy as time goes on)
2. Weekly throughput: 1,000,000 mosquitoes.

Operation procedure:

1. Technician operate a secondary automatic pre-sorting module, pre sorting with a least 90% female accuracy.
2. Technician load machine with up to 1,000,000 pupae / working week.
3. Technician to perform weekly basic maintenance procedures as trained by Senecio.

5. Appendix: Senecio Ltd. unique technology, capabilities, and IP

1. Senecio “Mosquito POD”, is the only device in the world that successfully released mosquitoes from a flying aircraft.
2. Senecio is the only company that has ever demonstrated release of mosquitoes from the same aircraft type Lee County holds, Beechcraft King Air.
Sitting on Senecio advisory board, Prof. Rimon Arieli, an Israeli top aeronautic expert, provided the aircraft owner with the aerodynamic justifications which enabled them to receive the permit from the FAA for the flight tests.
3. Senecio is the only company in the world, with a cross platform technology, from the automatic mosquito loading into tubes, with same tube technology loaded onto the release solution, on board either ground release vehicle, or the aircraft.
4. Senecio innovative technologies were acknowledged by the Israeli Chief Scientist, awarding it with the BIRD Foundation \$1M project for the development of the Mosquito POD for aerial release, and awarding it the Israeli Grand challenge Award (March 2019) for special impact on global health through its mosquito automatic sex sorting and packaging technology.
5. Senecio IP covering all aspects from automatic larvae rearing, sex sorting, loading, to ground and air release, represents the only technology that will enable Lee County to both sex sort, load, and later either ground or aerially release.
5. **Senecio robotic sex sorting based imaging as the insects are stationary**, received a positive PCT examination and was deemed novel, inventive and applicable by the patent office.
Senecio robotics sex sorting is protected by **PCT/IL2018/050081** (filing in USA by June 2019), **PCT/IL2018/050738** and **PCT/IL2018/050080**.
6. Senecio “Mosquito POD” is a unique innovation, protected by US application **US2017/0297710** and patent application **US2017/0267346**
7. Senecio air release adapted for drones is protected by US application **US/20190092471A1**
8. The method for fusion and mission planning of map layers, between distribution and release enabling a release correlated with on ground actual mosquito distribution is protected by US patent application **US2019/0082650**
9. Senecio ground release innovative mechanism is protected by US patent application **US2018/0332817**.
10. Senecio provides Lee county with a special competitive pricing for a collaboration project