

Decibel.*LIVE*

DAO Proposal Document

Important note to reviewers: this document is provided "AS IS" for DAO Token Holders to review.

A Proposal smart contract, crafted based on community feedback of this document, will be submitted following the completion of The DAO Creation.

To submit your comments and feedback, please use the DAO Forum thread on <https://forum.daohub.org/c/theDAO>

15th May 2015

Overview

Executive Summary

Decibel.*LIVE* will combine the smart contract features of ethereum with blockchain technology to provide trusted, real-time noise monitoring software.

Customers will be able to use the Decibel.*LIVE* website to quickly setup and deploy smart contracts that will continuously verify compliance against agreed parameters - and if necessary make financial transactions instantly between relevant parties.

Decibel.*LIVE* does not intend to manufacture noise monitoring equipment nor provide “on the ground” deployment of noise monitoring equipment. Instead, Decibel.*LIVE* aims to become the trusted software platform worldwide for noise monitoring and compliance. Customers will be able to rent professional noise monitoring equipment or deploy the Decibel.*LIVE* smartphone app for monitoring.

Investment of 5,000 ether (approximately US\$50,000) is requested from the DAO for phase 1 to develop a working prototype “prototype phase”. It is expected this prototype will be ready within 3 months from approval of funding. Proof of concept will involve an online, live simulation between randomly selected members from a DAO meet-up.

A further proposal will then be submitted to the community for development of phase 2 “enhancement phase”. This phase will focus on enhancement of proximity algorithms linked to location specific lidar data. Funding for this phase is expected to be in the region of 5,000-7,500 ether (US\$50,000-82,500).

Phase 3 is the “commercialisation phase” and will require approximately 1,000 ether (US\$10,000) every 3 months for advertising and marketing. Promotional activity will focus on online activity and converting leads through the Decibel.*LIVE* website.

Decibel.*LIVE* will earn income based on transactional data volumes and within 3 years is expecting annual sales of US\$1.29m and non-GAAP income of US\$1.05m per annum. Total funding commitment to breakeven is expected to be US\$172,500 and breakeven reached within 18 months.

Decibel.*LIVE* is being formed as a decentralised organisation with the DAO having full ownership. Contractors to Decibel.*LIVE* will be recommended and appointed by the DAO.

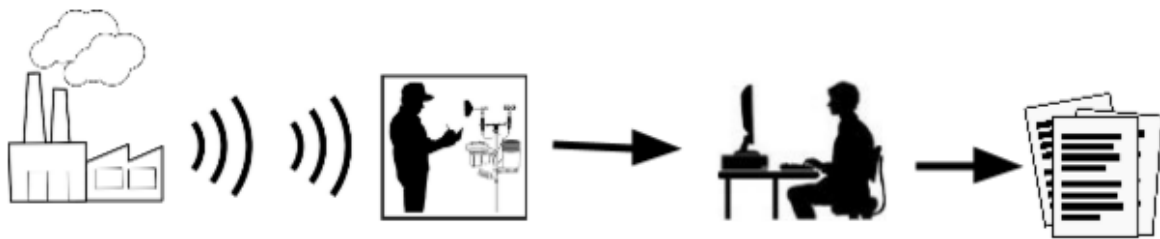
Point of Difference

Decibel.*LIVE* will be the most affordable noise monitoring solution in the market. Currently, noise monitoring requires specialist equipment and acoustic consultants/engineers costing thousands (and in some cases hundreds of thousands) of dollars.

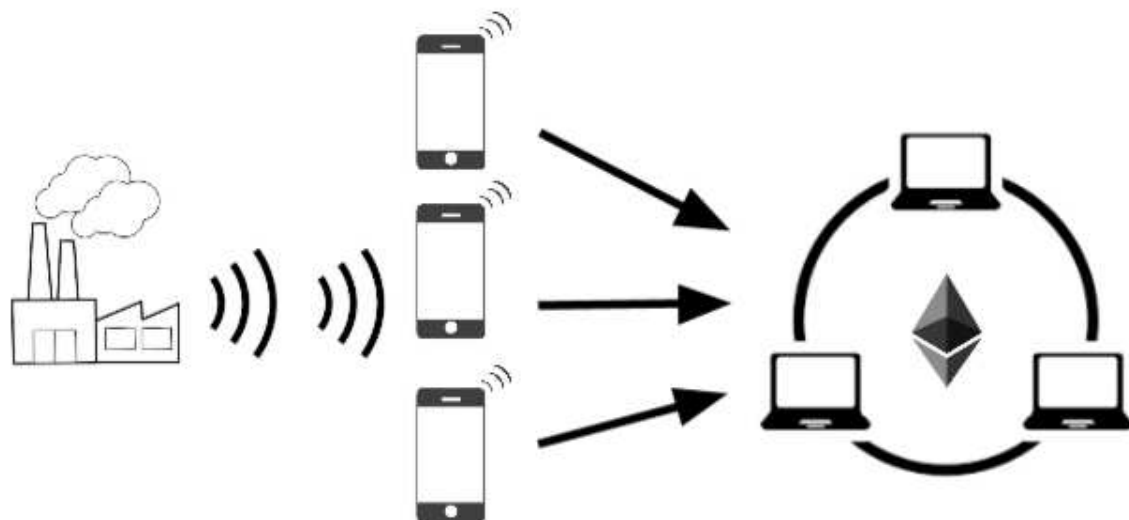
Decibel.*LIVE* will use the power of the decentralised network of smartphone app user readings, providing trust that readings from a multitude of unique but similar GPS locations are legitimate. Further, it will use the power of blockchain technology to provide trust in the results and assurance that associated financial outcomes are levied correctly.

This will radically disrupt the existing noise monitoring market for low/medium end deployments. There will still be a requirement for specialist acoustic engineers for high end deployments but even these deployments will eventually be able to use the Decibel.*LIVE* autonomous noise monitoring platform coupled with rented or purchased noise monitoring equipment.

1.1 Current Noise Monitoring Process Involving Engineers & Consultants



1.2 Decibel.*LIVE* Autonomous Noise Monitoring



Example:

Acme Company wants to build a manufacturing plant near the edge of a major city. The local public authority (i.e. a Council) sets noise parameters in consultation with Acme Company and writes these parameters into a formal consent application. The consent application refers to a Decibel.LIVE smart contract where these parameters are written into the contract code. Acme Company agrees to deposit a certain proportion of ether (or dB's) which are held in escrow. The Council either sets up remote noise monitoring equipment or advises local residents to download the Decibel.LIVE noise monitoring app.

Data from the noise monitoring equipment (or smartphone app) is sent to the ethereum blockchain on a continuous basis. This data is analyzed by the smart contract and if found to be outside the tolerance for the time of day/week a financial penalty is imposed on Acme Company and a proportion of funds held in escrow are automatically sent to the Council or direct to impacted nearby residents based on a proximity factor.

How it works

1. Council representatives go to the Decibel.LIVE website and setup a smart contract, specifying time of day noise parameters for Acme Company. Acme Company as a party to this smart contract deposits ether which is held in escrow.
2. Nearby residents are advised to download the Decibel.LIVE smartphone app and use this in situations where they feel the noise from Acme Company is excessive. Alternatively, noise monitoring equipment is installed (in the future this could involve drones or other autonomous vehicles that can be deployed to situations where there are noise complaints).
3. Equipment is IoT (Internet of Things) enabled sending live continuous data to the ethereum platform. Data can be set to be sent to the blockchain at time intervals varying from every few seconds to minutes or even hours.
4. Smart contracts on the ethereum platform interpret the data and if necessary instigate a charge to the offending party "offending party" to the contract and initiate reimbursement payments to the other parties to the contract "impacted parties".
5. The currency being dB's running on the ethereum platform are linked to ether (ETH/dB).

Other Applications

- Monitoring of rock concerts, motor racing events etc
- Quiet communities i.e. upmarket apartment buildings, or hotels where they want residents and guests to be assured of quiet stay through financial disincentives.
- Traffic enforcement agencies could use decibel monitoring linked to licence plate cameras to automatically detect and ticket noisy vehicles and provide compensation direct to neighboring households almost instantly as the vehicle drives past.
- Law enforcement agencies could receive instantaneous alerts if extremely loud Db readings are detected (thus pinpointing potential problems i.e. earthquakes, gunshots or a bomb blast the instant it happens saving valuable seconds or minutes in response times).

Decibel.LIVE Development Lifecycle

Phase 1: “Prototype Phase”

Duration: 3 months

Deliverables: Working prototype with live video demonstration showing setup of a noise monitoring contract, monitoring, and financial outcomes.

Task	Assigned to	Expected Cost (ETH)
Decibel.LIVE logo design	TBC	50 (USD\$500)
Specification document	Shane Loomb	200 (USD\$2,000)
Develop website for setup/deployment of noise applications	TBC	1,000 (USD\$10,000)
Develop smart contracts	TBC	1,000 (USD\$10,000)
Develop smartphone apps	TBC	2,500 (USD\$25,000)
Facilitator/Project co-ordination duties	Shane Loomb	250 (USD\$2,500)
Total		5,000 (USD\$50,000)

Phase 2: “Enhancement Phase”

Duration: 3 months

Deliverables: Market ready product with advanced noise monitoring features including lidar overlay (terrain consistency) and proximity algorithm calculations for financial outcomes.

Task	Assigned to	Expected Cost (ETH)
Specification document	Shane Loomb	150 (USD\$1,500)
Improve smartphone app	TBC	1,000 (USD\$10,000)
Enhance smart contract – normalisation of smartphone data	TBC	1,000 (USD\$10,000)
Overlay of lidar data to GPS linked results	TBC	2,500 (USD\$25,000)
Facilitator/Project co-ordination duties	Shane Loomb	250 (USD\$2,500)
Total		5,000 (USD\$50,000)

Phase 3: “Commercialisation Phase”

Duration: Ongoing (with 3 monthly DOA review)

Deliverables: Customer acquisition and awareness.

Task	Assigned to	Expected Cost (ETH)
Promotional video for website	TBC	1,000 (USD\$10,000)
Pay-per-click Marketing (monthly budget)	TBC	100 (USD\$1,000)
Press releases in key markets	TBC	1,000 (USD\$10,000)
Facilitator/Project co-ordination duties	Shane Loomb	250 (USD\$2,500)
Total		5,000 (USD\$50,000)

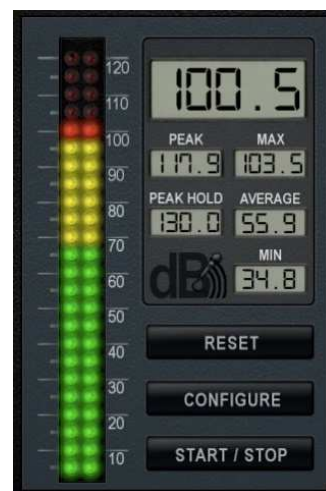
Decibel.LIVE Smartphone App

Decibel.LIVE will develop a smartphone app to take sound and GPS readings. There are a number of other apps already on the market but the Decibel.LIVE app will not only record the sound level but also take a brief audio recordings. This data will be sent to the blockchain where it will be analysed and a normal distribution curve applied. Results from the 25th to 75th percentile will be used as the basis for financial outcomes.

Examples of existing Apps on the market

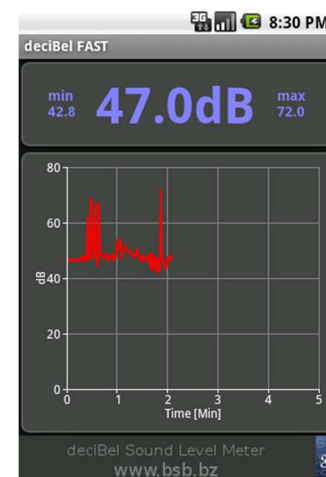
1. dB Volume Meter

dB Volume Meter shows the approximate decibel level, or Sound Pressure Level (SPL), wherever you and your smart phone are located. Although quite accurate, the application is mainly a tool for detecting noise levels in casual settings such as at airports or loud music venues. Those operating heavy machinery, explosive devices, or exposing themselves to known decibel levels over 90 dB should rely on a professional SPL meter.



2. deciBel

This sound level meter application for the Android market is a simple tool that uses the smart phone's microphone to measure Sound Pressure Level (SPL). deciBel displays the current, minimum, and maximum values of sounds around you, in decibels, and then turns this information into user-friendly sound level charts and graphs. The free application, developed by Peter Tschudin, offers help with calibrating the program as well as foreign translation.



Noise Monitoring Hardware

1. Sonitus EM2010 Wireless (GSM, 3G WiFi) Environmental Noise Monitors

<https://www.noisemeters.com/product/sonitus/>

The EM2010 Noise Monitor consists of an Outdoor Microphone, a small box with the processing unit, and a power supply. It can be connected up in minutes - just connect the microphone and power supply to the processor and away it goes. The unit will automatically measure the periodic Leq and L90 along with many other parameters, storing the results internally for up to 1 year and regularly uploading them to the web server.



The noise reports are viewed by logging in to a web site and selecting the days of interest. The results can be viewed in a tabular or graphical format, or you can download them to Excel (or similar spreadsheet program) and create your own reports.

The microphone has a standard thread, so it can be mounted on a tripod for short term use or on a mast for long term noise monitoring.

The processing unit is enclosed in a die-case aluminum box.

2. Brüel & Kjær Noise Monitoring Terminal - Type 3639E/G

<http://www.bksv.com/Products/EnvironmentManagementSolutions/UrbanEnvironmentManagement/NoiseInstrumentation/NoiseMonitoringTerminalType3639EG>

Noise Monitoring Terminal Type 3639-E/G is a noise monitoring terminal with 2 microphone options that enables integration with a wide range of peripherals and 3rd party software.

With a custom-designed enclosure, the Noise Monitoring Terminal (NMT) is designed for use in all climatic environments, as well as industrial, urban and rural conditions.

It is an intelligent unit that can be left unattended as part of an environmental noise monitoring system for permanent, mobile or semi-permanent monitoring.

With selectable communication and central control software, the Noise Monitoring Terminal can be controlled by a remote PC.



Current Noise Monitoring Companies

Norsonic www.norsonic.com

Cirrus Environmental <http://www.cirrus-environmental.com/>

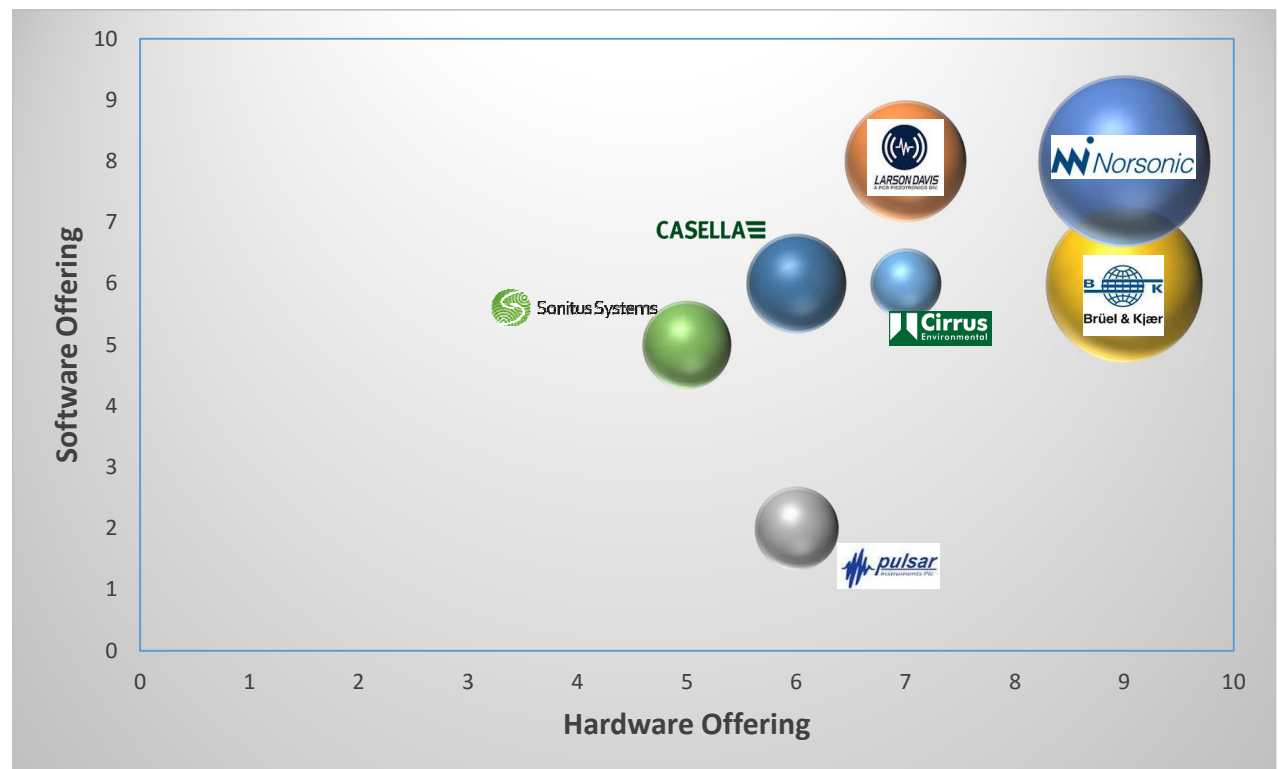
Larson Davis <http://www.larsondavis.com/>

Brüel & Kjær <http://www.bksv.com/>

Pulsar Instruments <http://pulsarinstruments.com/>

Casella Solutions <http://casellasolutions.com/>

Sonitus Systems <http://www.sonitussystems.com/>



Meet the Team



SHANE LOOMB – FOUNDER & FACILITATOR

Shane founded Decibel.LIVE to be a purely decentralised organisation. The ownership and subsequent development of the organisation will pass to DAO token holders.

Shane is available to continue as a facilitator to see the organisation grow & prosper. Shane holds an honours degree in accounting & finance and received the G.J. Schmidt award from the University of Waikato as top scholar in Business Planning & Strategy.

The DAO will appoint contractors to act as agents for Decibel.LIVE.

Initial appointments will be required for the following positions:

1. Facilitator
2. Developer – UI
3. Developer – Solidaty/Ethereum
4. Developer – Smartphone Apps



Decibel.LIVE - a Decentralised Organisation.

Normally an organisation structure has 3 components: a Board of Directors, a Management team & employees/contractors. Depending on the management style, employees (including in some situations management team members) have little or no say in the day-to-day operations apart from their particular sphere of expertise. Whilst this can be desirable in some situations it can lead to autocratic decision making and disengaged employees.

Decibel.LIVE will operate as a decentralised organisation where all team members will have an equal vote in decision making. If there is a dead-lock in voting on any particular operational decision it will be referred to the DAO token holders who, acting as the Board of Directors, will vote and make the ultimate decision.

This will result in a democratic, inclusive organisational structure where all decisions are valued and result in a highly empowered work force.

Decibel.LIVE, as a software platform will not require employees to be centrally located. Employees or contractors can work anywhere in the world and remain productive through regular online communication and meetings.

APPENDIX: Financial Assumptions

0.5	Minute data intervals (readings every 30 seconds)
2,880	Data readings per day to Ethereum blockchain
0.001	Estimated gas cost per reading (ETH)
\$0.01	Estimated gas cost per reading (USD)
\$28.80	Daily cost per customer (USD)
2.5%	Royalty to Decibel.LIVE
\$0.72	Daily revenue to Decibel.LIVE per customer (USD)
5,000	Customers worldwide
\$3,600.00	Daily revenue to Decibel.LIVE (USD)
\$1.296m	Annual revenue to Decibel.LIVE (USD)