**Anomalous Behaviour Detection System (ABDS)**

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**Contents of Vision and Scope Document**

1. **Business requirements**
2. **Business Opportunity**

In the market there exist security systems which are almost doing what we plan to achieve – they can contact police department raise alarm when triggered they are configurable from mobile devices as well just like our system – that is except one minor difference, we are planning to detect the anomalous behaviour automatically. Up until now this was happening by hiring guards to look at screen all the times. The problem here is that we need a greater number of guards for surveillance for bigger security solutions. We are planning to minimize that and remove human error from it.

1. **Business Objective and Success Criteria**

We consider our product revolutionizing enough to be able to gain at least a 40% market share in security system markets or sell 300,000 units within a span of 2 years at which we will consider our product successful and consequently would have attained positive cash flow and recovered our initial investment

1. **Customer or Market Needs**

Our customer currently deals with the issue that he can get the best security system installed but he/she still have to sit down when it comes to manually monitoring the camera footage. That’s exactly where we are coming in, we are integrating Machine Learning in the system so that it can detect anomaly in real-time and keep a record to view the footage from the highlighted events.

1. **Business Risks**

The biggest challenge while developing this system is the immense amount of data that will be needed to teach the system how to detect anomalous behaviour, Artificial Intelligence needs many different types of data to teach itself and it could be a time-consuming process to iron out every small flaw, as this is a safety critical system with very little room for error so our project could go over budget and overtime. People are still sceptical about artificial intelligence and could doubt the competence of our system or they could have privacy concerns

1. **Vision of the solution**
2. **Vision statement**

For household consumers and people with security needs who need an affordable home security system with minimal human intervention the Anomalous Behaviour Detection System (ABDS) is a smart home security system that can detect anomalous or suspicious behaviour automatically and inform a human supervisor who will make the necessary judgment. Unlike other normal camera systems that need a significant amount of personnel to monitor the cameras and are susceptible to making errors as humans are imperfect. Our product will drastically minimize this human input by shifting major work on Artificial Intelligence and reducing the number of people needed and increase efficiency.

1. **Major features**

Major features:

* Easily scale able to cover large facilities with a bigger number of cameras.
* Can detect suspicious behaviour automatically.
* Can determine the extent of suspiciousness.
* Will inform a human supervisor in case of detection.
* Can inform the user through an app about suspicious behaviour.

1. **Assumptions**

We are making following assumptions

* There is a sufficient need for security systems.
* People want to minimize the human element in the system.
* Users are willing to spend a little more capital earlier to save much more money long term.
* Users will be acceptable of this new technology involving Artificial Intelligence.

1. **Major dependencies to external factors outside of the project’s control**

We have to deal with these external factors

* 1. We are dependent on third parties to provide us with data for our Artificial Intelligence.
  2. Government regulations for protection of user privacy.
  3. Concern for breach of user’s data.
  4. Future Competition with potentially better features.

1. **Business context**
2. **Project Priorities**

Our priorities during development would be to give utmost importance to the privacy of our users through any and all means. Another big priority for us is to use Artificial Intelligence and Machine Learning for the development of our system that will use different datasets to detect human behaviour.

1. **Operating Environment**

The system would have a simple control panel which would be connected to our phone and everything would be controlled by the app on our smart phones – and we would make sure that the control panel is not just IOT based but the system wiring is done within house circuit as well along with backup power – in case of power outage the system would be still functional and would still be able to perform all the operation with the control panel by altering the wiring of the house circuit.

1. **Scope and limitation**
2. **Concept and range of proposed solution**

Our system would use machine learning and artificial intelligence to detect suspicious human behaviour which will be relayed to a human sentry for confirmation and necessary action. We will have extensive use of different data sets to teach our system through AI. Also, the privacy of our users would be of utmost importance as our system will deal with the surveillance of personal livelihood of people so we have to make sure our system can’t be hacked or breached.

1. **Limitations**

The system is not a completely anonymous and independent entity that can work without any supervision. It is not a replacement for humans, only a way to reduce the human involvement significantly, the system will still need someone who can monitor the flagged surveillance videos and it will be a human who will ultimately decide whether the threat is real or not or if some action is necessary.

1. **Scope of initial release**

For our very first initial release we will give the users to set up a system with 6 cameras that will only use visual clues for detection. On subsequent releases we will give them the option to add motion sensors, mics, and other various sensors for better detection anomalies. Later we will also give them the ability to add more cameras (upto 20) for a wider coverage of surroundings which will be especially beneficial for corporate holdings like factories.

1.1

A system with 6 cameras with full detection capabilities

1.2

Ability to add various different sensors like motion detectors etc.

1.3

Addition of more than 6 cameras for commercial places (upto 20)