**FORM 2**

**THE PATENTS ACT,1970**

**(39 OF 1970)**

**&**

**THE PATENT RULES,2003**

**COMPLETE SPECIFICATION**

**(See Section 10;rule 13)**

**“AN APP WHERE GENERAL PUBLIC CAN REPORT INFORMATION ON DRUG TRAFFICKING ANONYMOUSLY.”**

**APPLICANT(S)**

| **Name in Full** | **Nationality** | **Address of the Applicant** |
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The following specification particularly describes the invention and the

manner in which it is to be performed:

**AN APP WHERE GENERAL PUBLIC CAN REPORT INFORMATION ON DRUG TRAFFICKING ANONYMOUSLY.**

**BACKGROUND**

**[001]** India’s pharmaceutical industry is “the largest provider of generic drugs globally”, as per the department of pharmaceuticals, Ministry of Chemicals and Fertilizers. But there have been reports of clandestine manufacturing and siphoning of synthetic drugs, as well as illicit trade in chemical precursors. Currently there is no digital way of reporting drug trafficking. The only way is to reach out to the Narcotics squad or nearby police station. However, this is not feasible since the majority of the public will not be ready to disclose their profile or will not be ready to spend their time physically.

**[002]**  The intended solution is to enable the public to report and upload any relevant information about the findings of drug trafficking in their locality anonymously.

**[003]** In order to overcome such problems , we developed an app named “ANAAM” where the general public can report information on drug trafficking anonymously.

**[004]** Through our app ANAAM users will provide descriptions related to trafficking and proof of information such as photographs / videos / sound recording and real time location of drug trafficking.

**SUMMARY**

**[004]** An app named “ANAAM” which allows users to share information related to drug trafficking anonymously to the NCB(Narcotics Control Bureau)

**[005]** “ANAAM” has three main pillars, which are the technologies upon which this app has been built. We use Flutter as the technology to build this application. Flutter is an open-source mobile Software Development Kit, a cross-platform development tool that can use the same code base for iOS and Android applications. Flutter ensures fast app startup time and fewer performance issues.

**[006]** The most crucial aspect of this app is anonymity and TOR (The Onion Router) comes to aid in this prospect. TOR works on the principle of onion routing to ensure privacy.

**[007]** To filter out the legitimate information provided by users like descriptions related to trafficking and proof of information such as photographs/videos/sound recording and real time location of drug trafficking, we use Machine Learning's E-Email spam detection algorithm. We will use Supervised ML techniques to separate genuine and spam data.

**DETAILED DESCRIPTION**

**[008] “**ANAAM” app is built in the Flutter environment . Flutter was officially launched by Google in 2018. The central idea behind Flutter is the use of Widgets. By combining different widgets, developers can build an entire UI. Each of these widgets defines a structural element, stylish element or layout structure, and many others.

**[009]**  Flutter uses the Dart programming language. It compiles Dart ahead of time (AOT) into native code for multiple platforms. Dart has a ‘tree shaking’ compiler that only indicates the code needed in your app. You can use its large library of widgets freely, even if you only require just a widget or two. These two features of Flutter ensure fast app startup time and fewer performance issues.

**[010]** Today, Flutter is the only mobile SDK that offers reactive views without the need for a JavaScript bridge.

**[011]** To achieve the language support we used Flutter Translate , a fully featured localization / internationalization (i18n) library for Flutter. It lets you define translations for your content in different languages and switch between them easily.

**[011]**  To achieve anonymity we used TOR, short for **The Onion Routing project**, in direct reference to the technology on which it is based**.** TOR is based on “onion routing“, developed in the 1990’s by two American researchers to **anonymize communication** of US intelligence which became public in the 2000’s. The project was largely driven and developed by U.S. government agencies, initially by the United States Naval Research Laboratory with the support of the office of Naval Research (ONR) and the Defense Advanced Research Project Agency (DARPA).

**[012]** The TOR network allows users of the internet **to anonymously access** content on the internet. This technology was designed for TCP connections and allows the anonymous use of web browsers, instant messaging, IRC, SSH, email, and P2P.

**[013]** TOR network has two main properties :

1 . Your internet service provider and anyone watching your connection locally, will not be able to track your internet activity or the address of the website you visit.

2 . The operators of the websites and services that you can't use, and anyone watching them, will see a connection coming from the TOR network instead of your real internet (IP).

**[014]** Onion services refer to the web content intended specifically for use by the TOR network. These web services use the **TOP LEVEL DOMAIN.** Onion are not indexed by search providers such as Google. The user must know the exact address of the service in order to access it directly. Unlike other traditional websites, access to onion service is completely encrypted via the TOR browser. In case there is no clear text request from the exit node with the resulting metadata to the target server.

**[015]** The user’s identity is better protected when browsing onion services compared to traditional websites. For this reason, various news portals, organizations for human rights, freedom of speech and the press, as well as services providers and email providers concerned with data protection, use their own onion services as a supplement to their traditional websites. The most well-known examples of this include The New York Times, BBC News, The Intercept, ProtonMail, Mailbox.org and DuckDuckGo.

**[016] TOR** is a network of virtual tunnels that allows you to improve your privacy and security on the internet. **TOR** works by sending your traffic through three random servers, also known as relays, in the TOR network. The last relay in the circuit, or the “exit relay”, then sends the traffic onto the public internet.

**[017]** First TOR connects to an entry guard. It uses the public list of all TOR nodes IP addresses to find one. Then, it takes this entry guard to “extend the circuit “ towards the middle relay. This means the middle relay only sees the address of the entry guard, but not our address.

**[018]** One more time, our TOR asks (through the partially established circuit) the middle node to extend the circuit to the exit node which completes the circuit. Each node only knows the address of its successor and predecessor without knowing anything more.The entry guard can only see the address of the host but not the destination. Thus, privacy is ensured.

**[019]** All of this can be done using the power of **Cryptography,**  particularly Hybrid cryptography. Without going into the details, the main idea is to create a secret key for each node and to distribute it securely to them using the long time key.

**[020]** When the circuit is completed, we share a unique secret key with each node of the circuit, and each node only knows its predecessor and its successor. Then, we can successively encrypt our packets with all the secret keys we negotiated during the circuit setup phase. This is where the “onion” routing name comes from- the succession of these layers of encryption looks like an onion.

**[021]** Using Tor makes it more difficult to trace the Internet activity to the user. Tor's intended use is to protect the personal privacy of its users, as well as their freedom and ability to conduct confidential communication by keeping their Internet activities unmonitored.



**[022]** To filter our genuine and promising data, we use Machine Learning's E-Email spam detection algorithm. We will use Supervised ML techniques to separate genuine and spam data. Most spam filtering techniques are based on text categorization methods. Thus filtering spam turns out to be a classification problem. At present, various machine learning algorithms are available to perform spam filtering, some of which are the Decision tree classifier, Multilayer Perceptron, Naive Bayes classifier, etc.

**[023]** Different machine learning algorithms can detect spam, but one that has gained appeal is the “naïve Bayes” algorithm. As the name implies, naïve Bayes is based on “Bayes’ theorem,” which describes the probability of an event based on prior knowledge .Naïve Bayes is a very efficient and fast machine learning algorithm, which lent to its popularity in many fields.

**BRIEF DESCRIPTION ABOUT THE PROCESS FLOW**

**[023]** As the app opens, users will describe the information related to drug trafficking , manually provide real time geo location of drug trafficking and upload proof of information like photographs/video/audio recording in the app.

**[024] “**ANAAM” app comes with the support of 78 languages , users are free to choose any of those languages .

**[025]** Then the TOR browser connects to an entry guard using the public list of all TOR nodes' IP addresses. Then, it asks this entry guard to extend the circuit towards a middle relay. This means the middle relay only sees the address of the entry guard but not our address. Once more, the TOR asks the middle node to extend the circuit to the exit node.

**[026]** Each node can only see the address of its predecessors and successors without knowing anything more. Thus, privacy is ensured. All of this can be done using the power of hybrid cryptography.

**[027]** The basic principle is to create a secret key for each node and securely distribute it to them using their long-time key. When the circuit is completed, we share a unique secret key with each node of the circuit, and each node only knows its successor and predecessor. As such, we can encrypt our packets with all the secret keys we negotiated during the circuit setup phase.

**[028]**  As soon as the information reaches the exit node , a spam detection machine learning model comes into play to prioritize and filter out the legitimate information.

**DEPENDENCIES OF THE APPLICATION**

The application has a few dependencies which are necessary to use the app effectively. These dependencies are :

**1. Internet access.**

Internet access must be enabled to use this application which will be mandatory in order to submit the form which will be sent to NCB. Without internet access users will not be able to access the TOR VPN .

**2. Android/iOS device.**

User’s Device must be running in an operating system like the latest version of android and iOS .

**3. Device camera.**

The device camera is a necessity for the purpose of capturing evidence in the form of photos or videos which may reveal several pieces of information regarding peddling of drugs and even greater threats to national security.

**4. Device microphone.**

The device microphone is needed to record the audio / conversations that will be extremely helpful in capturing the guilty.

**USE CASES :**

**[028] To enhance national security and public awareness.** The trafficking and abuse of drugs has affected nearly all aspects of our lives. The damage caused by drug abuse and addiction is reflected in an overburdened justice system, a strained healthcare system, lost productivity and environment destruction.

**[029]** The consequences of illicit drug use impact the entire criminal justice system, taxing resources at each stage of the arrest, adjudication, incarceration, and post-release supervision process. Although drug courts and diversion programs in many jurisdictions have helped to alleviate this burden, substance abuse within the criminal justice population remains widespread.

**[030]** The illicit use of drugs has a negative impact on the lifestyle of citizens of the country and the consequences of the impact of drugs on the environment, productivity, healthcare system and criminal justice system are subjects of national security.

**[031] To entrap drug peddlers / dealers.** One of the serious issues regarding the illicit drug market is the supply of drugs. The supply of drugs has direct implications on increasing drug usage and scaling the larger drug market among the youth.

**[032] To achieve exponential increment in seizing drugs.** The vision of this application is to improve the process of seizure of drugs, and make it exponentially larger.

**[033] Major help to NCB department to identify the drug trafficking regions.** This application may help the NCB (Narcotics Control Bureau) department to identify the most drug prone areas. With the help of the data gathered using Machine Learning and Data Analytics, we can observe the areas with the most reports registered. Using this data, serious actions can be taken on some specific areas and it can also help in discovering serious issues sooner.

**[034] Act as a bridge for the public to connect with the NCB while protecting their identity.** One of the most important aspects of this app is to connect the general public with the Narcotics Control Bureau. While facing drug peddling in a specific area, people may feel uncomfortable in reporting it to NCB due to reasons like having to reveal your identity which may pose a great threat to their lives, while also causing problems with their societal image due to repeated visits from the police. This app hence connects the general public with NCB while simultaneously maintaining their anonymity, thereby providing solutions to the above mentioned challenges currently faced by people.

**[035] To know more about NCB’s relevant laws** like Narcotic Drugs and Psychotropic Substances Act, Under the NDPS Act, it is illegal for a person to produce/manufacture/cultivate, possess, sell, purchase, transport, store, and/or consume any narcotic drug or psychotropic substance.

**[036]** The Prevention of Illicit Trafficking in Narcotic Drugs and Psychotropic Substances Act is a drug control law passed in 1988 by theParliament of India. It was established to enable the full implementation and enforcement of the Narcotic Drugs and Psychotropic Substances Act of 1985.

**7. To conduct public surveys related to drug trafficking.**

**8. Drug education.** Effective drug education is important because young people are faced with many influences to use both licit and illicit drugs. Education can play a counterbalancing role in shaping a normative culture of safety, moderation, and informed decision making.

**9. Human Trafficking.** Drug trafficking has serious implications with human trafficking. Women and children are lured into using drugs and when they are in an unconscious and helpless state, they could be prone to more heinous crimes than drugs. Another such crime that involves both human trafficking and drug peddling is smuggling drugs through women and children. In several cases, in the facade of pregnant women, drugs are being smuggled.

**10. Child Abuse.**

Children under the age of 18 are not sold any alcoholic beverage, tobacco or any kind of unprescribed drug. Knowing this and the fact that most people aren't suspicious of children, drug traffickers take advantage of it and smuggle drugs through them.

**11. Abuse of Tobacco 21 (T21) law.**

On December 20, 2019, President signed legislation amending the Federal Food, Drug and Cosmetic Act, and raised the federal minimum age for sale of tobacco products from 18 to 21 years. This legislation known as T21 made it effectively illegal for retailers to sell any tobacco products including cigarettes and cigars to anyone under 21 years.

**CLAIMS**

I/We Claim:

1. An App named “ANAAM” where the general public can report information on drug trafficking anonymously. ANAAM users will provide descriptions related to trafficking and proof of information such as photographs/videos/sound recording and real time location of drug trafficking.
2. “ANAAM” uses TOR (The Onion Router). To achieve anonymity we used TOR , short for The Onion router. Tor's intended use is to protect the personal privacy of its users, as well as their freedom and ability to conduct confidential communication by keeping their Internet activities unmonitored.
3. “ANAAM” comes with different language support. Supports both languageCode(en) and languageCode\_cou--ntryCode (en\_US) locale formats.
4. “ANAAM” is built in Flutter Environment . Flutter uses the Dart programming language. Flutter ensures fast app startup time and fewer performance issues.
5. “ANAAM” uses Machine Learning's E-Email spam detection algorithm.We used Supervised ML techniques to separate genuine and spam data .

Dated this

AGENT NAME

**Title:** **An App where the general public can report information on drug trafficking anonymously.**

**ABSTRACT**

An app named ANAAM which allows users to share information related to drug trafficking anonymously to the NCB(Narcotics Control Bureau) . This app is built using Flutter Development Kit to achieve cross platform (Android / iOS / Windows / Linux) and comes with 78 languages support. There will be a facility for users to provide descriptions of trafficking and provide proof such as photographs / video / sound recording and real time location of trafficking through ANAAM app. This app uses TOR(The Onion Router) VPN to achieve anonymity of users. This app uses a Spam Detection Machine Learning model to prioritize information and filter out the legitimate information. At present there might be no app like ANAAM in the real world which provides this type of anonymity and features.

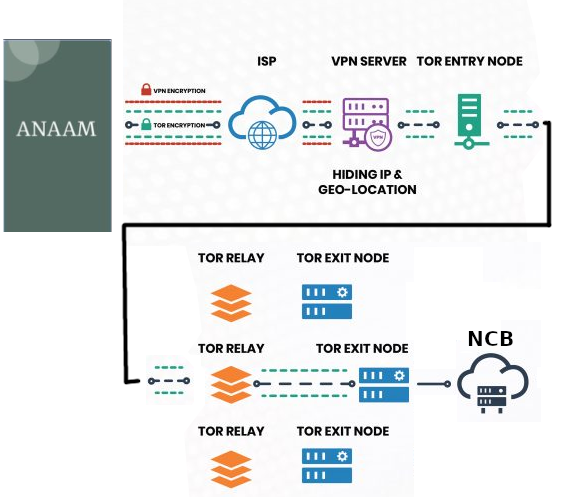
**PROCESS FLOW CHART**

**Name of the Applicant:**

**Application No.: Total Sheets: 1**

**No. of sheet: 1 of 1**



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**Agent for the Applicant**