

Claims

1. A method for environmental credit scoring of a plurality of users and partners, comprising
registering a plurality of sites, users, partners, and verifiers by assigning a unique user identifier, wherein registering the plurality of sites, users, partners, and verifiers, wherein the registration comprises:

creating a plurality of request identifier for a plurality of combinations of sites, users, partners, and verifiers and their associated site devices, user devices, partner device, and verifier devices respectively, wherein the plurality of partners are associated with one or more point of service systems,

receiving a plurality of request identifiers from each of the plurality of user devices, partners devices, verifier devices, and one or more site devices and point of service systems,

matching each of the stored plurality of request identifiers with the received plurality of request identifiers to verify the plurality of request identifiers,

generating one or more challenges,

transmitting the one or more challenges to the each of the plurality of devices, wherein the one or more challenges are applied to the point of service systems physical unclonable functions, site devices physical unclonable functions, user devices physical unclonable functions, partner devices physical unclonable functions, and verifier devices physical unclonable functions to generate the corresponding unique device identifier,

receiving a plurality of unique device identifiers for each of the plurality of devices;

receiving one or more data records comprising biometric data of each of the plurality of users, partners, and verifiers,

receiving one or more data records comprising site images, videos, and/or live videos of each of the sites,

receiving one or more data records comprising geographical location data of each site devices, point of service systems, user devices, partner devices, and verifier devices,

extracting one or more features and biometric features from the one or more data records of each of the plurality of sites, users, partners, and verifiers,

integrating the biometric features of each of the users, partners, and verifiers, the sites' images, videos, or live videos features of each of the sites, the unique device identifiers of each of the site devices, point of service systems, user devices, partner devices, and verifier devices, and geographical location data of each of the site devices, point of service systems, user devices, partner devices, and verifier devices based on a plurality of combinations, and

storing the generated templates resulted from the integration in the database of the server computer system;

authenticating a plurality of sites, users, partners, and verifiers comprises

receiving one or more request identifiers from each of the site devices, point of service systems, user devices, partner devices, and verifier devices,

verifying the received one or more request identifier, wherein the received one or more request identifier is compared with a stored plurality of request identifier to verify the one or more request identifier,

generating one or more challenges,

transmitting one or more challenges to one or more site devices, user devices, partner devices, and verifier devices in real time,

receiving one or more unique device identifiers, biometric data of the one or more users, partners, and verifiers, real time location data of the one or more devices, and sites' images, videos, and/or live videos of the one or more sites,

extracting one or more biometric features from the received biometric data of the one or more users, partners, and verifiers according to the models stored in the database of the server computer system,

extracting one or more site's images, videos, and/or live videos features of the one or more sites according to the models stored in the database of the server computer system,

creating a template for comparison comprising the one or more biometric features, the one or more site's images, videos, and/or live videos features, the one or more unique device identifier, and the real-time geographical location data,

retrieving the one or more initial templates created and stored in the database of the server computer system during the registration of the plurality of sites, users, partners, and verifiers, wherein the one or more request identifier received from each of the devices is used to retrieve the one or more initial templates stored in the database, and

comparing the one or more templates created during the authentication against the one or more initial templates created and stored in the database of the server computer system during the registration of the plurality of sites, users, partners, and verifiers, wherein the authentication of the plurality of sites, users, partners, and verifiers may be successful if data variations between the template created during the authentication and the initial template created and stored during the registration are within a pre-defined threshold, and wherein the pre-defined threshold relating to the data variations of the verified geographical location data of the one or more site devices, point of service systems, user devices, partner devices, and verifier devices may be adjusted to limit the access of the one or more users, partners, verifiers, sites, and/or their associated devices to the server computer system to a specific geographical location, specific area, a specific city, and/or specific country;

receiving information from the registered users comprising personal information and information about one or more environmental activities completed by the registered users before becoming registered users, wherein the environmental activities information comprising information on home energy, transportation, waste, food, and shopping, wherein the verification of received information is done by communicating with one or more point of service systems of a registered partner, one or more devices of a registered partner, and/or one or more devices of an unregistered entity, and wherein the respective account

identifiers of one or more users, partners, distributor, and/or other identification data comprising unique user identifiers, biometric data, blockchain identifier, public keys, name, address, and/or other identification data is used in communications exchanged therewith for the verification process;

determining the environmental impact of each activity of the user's environmental activities completed by the user before becoming a registered user based on a verified environmental product declaration of the same environmental activity if the environmental product declaration is previously verified by a verifier of the verifiers and associated with a partner of the partners;

receiving at least one environmental activity record from one or more devices of at least one of the plurality of partners in real-time, wherein the at least one environmental activity record comprises data relating to a plurality of environmental activities and environmental law violations offered or reported by the plurality of partners, wherein the data relating to the plurality of environmental activities offered by the plurality of partners comprises one or more environmental product declarations or information relating to a request for creating an environmental product declaration;

receiving at least one site activity record from one or more devices of at least one of the plurality of sites in real-time, wherein the site data record for each site activity comprises identification data, wherein the identification data comprises biometric data of a partner of the partners, and/or one or more verifiers, identification data of a site of the sites, wherein the identification data comprises site images, videos, and/or live videos, life cycle inventory data comprises onsite operations data, onsite material consumption data, onsite emissions data, onsite energy consumption data, and/or onsite waste data of one or more products and/or services of the partners collected by the site devices, and geographical location data of the site device acquired by the GPS/AGPS sensors of the site devices, wherein at least one of the verifiers utilize the at least one of the site activity record to verify or create an environmental product declaration of a product or a service offered by at least one of the plurality of partners;

receiving at least one verification activity record from one or more devices of at least one of the plurality of verifiers in real-time, wherein the at least one verification activity record comprises data relating to a plurality of verification activities, wherein the data relating to the plurality of verification activities comprises data relating to verification of an environmental product declaration, creation of an environmental product declaration, determination of the environmental impact of environmental activities, and determination of the environmental impact of environmental law violation;

receiving at least one environmental activity record from a point of service system of at least one of the plurality of partners in real-time, wherein the at least one environmental activity record comprises data relating to a plurality of environmental activities completed by at least one of the plurality of users;

assigning each of the site activity data records, users environmental activity records, partners environmental activity records, and verification activity records an identification number;

verifying one or more environmental law violations of one more partners, distributors, and users with at least one of the plurality of partners and/or one or more external systems of unregistered entities by communicating with one or more devices of partners and/or one or more external systems of unregistered;

calculating a score of each environmental activity offered by each of the plurality of partners based on environmental impact information included in a verified environmental product declaration of a product and/or a service offered by each of the plurality of partners and the information included in verified environmental product declarations of products and services offered by other partners, wherein the environmental product declaration is verified by one or more registered verifiers selected by the server computer system;

calculating a score of each environmental law violation reported by the partners based on the environmental impact information of each environmental law violation,

wherein the estimated environmental impact of each environmental law violation is determined by one or more verifiers selected by the server computer system;

calculating an environmental credit score of the partners based on the calculated scores;

matching the environmental activity records of at least one of the plurality of users and partners with the unique user identifier to identify the environmental activity records of the at least one of the plurality of users and partners associated with the unique user identifier for each of the environmental activities completed by the user, and crediting respective environmental activity records based on the environmental activities completed by the user;

calculating an environmental credit score for the at least one of the plurality of users based on the environmental activities' data credited under the environmental activity records of the at least one of the plurality of users, wherein the calculation of an environmental credit score for each of users is done by considering factors comprising (a) the number and score of the environmental product declarations of the environmental activities completed by the users, where the score of the environmental product declaration determine the number of points the user will get, (b) the calculation of the number of points relating to the environmental activities recommended to each of users and completed by each of the users, and (c) the total number of the score of environmental law violations of each of the users;

analyzing the environmental credit score of the users to determine the one or more users with a high environmental credit score;

publishing the environmental credit scores of the users and partners and notifying the users and partners;

identifying one or more sites, partners, and verifiers associated with the site activity records collected by the or more components of the site devices;

extracting data indicating real-time data related to an environmental product declaration of at least one of the plurality of partners for each site device;

generating a display of a sensor listing for each site device, wherein each of the sensors is listed with its associated real-time data related to the environmental product declaration, wherein the generated display further comprises site identification information and partners identification information for each of the sensors of each of the site devices, wherein the generated display further comprises historical data over a period of time, wherein the generated display comprises graphical data;

defining one or more alarm levels based on collected real-time data related to the environmental product declaration of an environmental activity offered by the at least one of the plurality of partners, wherein the one or more alarm levels are defined by one or more verifiers based on the collected real-time data related to the environmental product declaration; and

determining whether the collected data by the one or more sensors of the one or more site devices includes real-time data that meet any of the defined alarm levels, wherein at least one of the defined alarm levels is met, and further comprising generating an alarm notification and notify the one or more partners and one or more verifiers, wherein one or more verifiers are assigned to reverify the environmental product declaration when at least one of the defined alarm levels is met, and wherein the environmental activity offered by a partner of the partners is made unavailable to be completed by one or more users when at least one of the defined alarm levels is met.

2. A system for environmental credit scoring of a plurality of users and partners to efficiently monitor and gather real-time data on their environmental activities and to ensure data security, reliability, and traceability comprises a plurality of devices associated with a plurality of sites, users, partners, and verifiers, wherein the plurality of devices is communicatively coupled with a server computer system;

the server computer system comprising a processor configured to register a plurality of sites, users, partners, and verifiers by assigning a unique user identifier, wherein the server computer system is configured to:

create a plurality of request identifier for a plurality of combinations of sites, users, partners, and verifiers and their associated site devices, user devices, partner device, and verifier devices respectively, wherein the plurality of partners are associated with one or more point of service systems,

receive a plurality of request identifiers from each of the plurality of user devices, partners devices, verifier devices, and one or more site devices and point of service systems,

match each of the stored plurality of request identifiers with the received plurality of request identifiers to verify the plurality of request identifiers,

generate one or more challenges,

transmit the one or more challenges to the each of the plurality of devices, wherein the one or more challenges are applied to the point of service systems physical unclonable functions, site devices physical unclonable functions, user devices physical unclonable functions, partner devices physical unclonable functions, and verifier devices physical unclonable functions to generate the corresponding unique device identifier,

receive a plurality of unique device identifiers for each of the plurality of devices;

receive one or more data records comprising biometric data of each of the plurality of users, partners, and verifiers,

receive one or more data records comprising site images, videos, and/or live videos of each of the sites,

receive one or more data records comprising geographical location data of each site devices, point of service systems, user devices, partner devices, and verifier devices,

extract one or more features and biometric features from the one or more data records of each of the plurality of sites, users, partners, and verifiers,

integrate the biometric features of each of the users, partners, and verifiers, the sites' images, videos, or live videos features of each of the sites, the unique device identifiers of each of the site devices, point of service systems, user devices, partner devices, and verifier devices, and geographical location data of each of the site devices,

point of service systems, user devices, partner devices, and verifier devices based on a plurality of combinations, and

store the generated templates resulted from the integration in the database of the server computer system;

authenticate a plurality of sites, users, partners, and verifiers comprises

receiving one or more request identifiers from each of the site devices, point of service systems, user devices, partner devices, and verifier devices,

verifying the received one or more request identifier, wherein the received one or more request identifier is compared with a stored plurality of request identifier to verify the one or more request identifier,

generate one or more challenges,

transmit one or more challenges to one or more site devices, user devices, partner devices, and verifier devices in real time,

receive one or more unique device identifiers, biometric data of the one or more users, partners, and verifiers, real time location data of the one or more devices, and sites' images, videos, and/or live videos of the one or more sites,

extract one or more biometric features from the received biometric data of the one or more users, partners, and verifiers according to the models stored in the database of the server computer system,

extract one or more site's images, videos, and/or live videos features of the one or more sites according to the models stored in the database of the server computer system,

create a template for comparison comprising the one or more biometric features, the one or more site's images, videos, and/or live videos features, the one or more unique device identifier, and the real-time geographical location data,

retrieve the one or more initial templates created and stored in the database of the server computer system during the registration of the plurality of sites, users, partners, and verifiers, wherein the one or more request identifier received from

each of the devices is used to retrieve the one or more initial templates stored in the database, and

compare the one or more templates created during the authentication against the one or more initial templates created and stored in the database of the server computer system during the registration of the plurality of sites, users, partners, and verifiers, wherein the authentication of the plurality of sites, users, partners, and verifiers may be successful if data variations between the template created during the authentication and the initial template created and stored during the registration are within a pre-defined threshold, and wherein the pre-defined threshold relating to the data variations of the verified geographical location data of the one or more site devices, point of service systems, user devices, partner devices, and verifier devices may be adjusted to limit the access of the one or more users, partners, verifiers, sites, and/or their associated devices to the server computer system to a specific geographical location, specific area, a specific city, and/or specific country;

receive information from the registered users comprising personal information and information about one or more environmental activities completed by the registered users before becoming registered users, wherein the environmental activities information comprising information on home energy, transportation, waste, food, and shopping, wherein the verification of received information is done by communicating with one or more point of service systems of a registered partner, one or more devices of a registered partner, and/or one or more devices of an unregistered entity, and wherein the respective account identifiers of one or more users, partners, distributor, and/or other identification data comprising unique user identifiers, biometric data, blockchain identifier, public keys, name, address, and/or other identification data is used in communications exchanged therewith for the verification process;

determine the environmental impact of each activity of the user's environmental activities completed by the user before becoming a registered user based on a verified environmental product declaration of the same environmental

activity if the environmental product declaration is previously verified by a verifier of the verifiers and associated with a partner of the partners;

receive at least one environmental activity record from one or more devices of at least one of the plurality of partners in real-time, wherein the at least one environmental activity record comprises data relating to a plurality of environmental activities and environmental law violations offered or reported by the plurality of partners, wherein the data relating to the plurality of environmental activities offered by the plurality of partners comprises one or more environmental product declarations or information relating to a request for creating an environmental product declaration;

receive at least one site activity record from one or more devices of at least one of the plurality of sites in real-time, wherein the site data record for each site activity comprises identification data, wherein the identification data comprises biometric data of a partner of the partners, and/or one or more verifiers, identification data of a site of the sites, wherein the identification data comprises site images, videos, and/or live videos, life cycle inventory data comprises onsite operations data, onsite material consumption data, onsite emissions data, onsite energy consumption data, and/or onsite waste data of one or more products and/or services of the partners collected by the site devices, and geographical location data of the site device acquired by the GPS/AGPS sensors of the site devices, wherein at least one of the verifiers utilize the at least one of the site activity record to verify or create an environmental product declaration of a product or a service offered by at least one of the plurality of partners;

receive at least one verification activity record from one or more devices of at least one of the plurality of verifiers in real-time, wherein the at least one verification activity record comprises data relating to a plurality of verification activities, wherein the data relating to the plurality of verification activities comprises data relating to verification of an environmental product declaration, creation of an environmental product declaration, determination of the environmental impact of environmental activities, and determination of the environmental impact of environmental law violation;

receive at least one environmental activity record from a point of service system of at least one of the plurality of partners in real-time, wherein the at least one environmental activity record comprises data relating to a plurality of environmental activities completed by at least one of the plurality of users;

assign each of the site activity data records, users environmental activity records, partners environmental activity records, and verification activity records an identification number;

verify one or more environmental law violations of one more partners, distributors, and users with at least one of the plurality of partners and/or one or more external systems of unregistered entities by communicating with one or more devices of partners and/or one or more external systems of unregistered;

calculate a score of each environmental activity offered by each of the plurality of partners based on environmental impact information included in a verified environmental product declaration of a product and/or a service offered by each of the plurality of partners and the information included in verified environmental product declarations of products and services offered by other partners, wherein the environmental product declaration is verified by one or more registered verifiers selected by the server computer system;

calculate a score of each environmental law violation reported by the partners based on the environmental impact information of each environmental law violation, wherein the estimated environmental impact of each environmental law violation is determined by one or more verifiers selected by the server computer system;

calculate an environmental credit score of the partners based on the calculated scores;

match the environmental activity records of at least one of the plurality of users and partners with the unique user identifier to identify the environmental activity records of the at least one of the plurality of users and partners associated with the unique user identifier for each of the environmental activities completed by the user, and crediting respective environmental activity records based on the environmental activities completed by the user;

calculate an environmental credit score for the at least one of the plurality of users based on the environmental activities' data credited under the environmental activity records of the at least one of the plurality of users, wherein the calculation of an environmental credit score for each of users is done by considering factors comprising (a) the number and score of the environmental product declarations of the environmental activities completed by the users, where the score of the environmental product declaration determine the number of points the user will get, (b) the calculation of the number of points relating to the environmental activities recommended to each of users and completed by each of the users, and (c) the total number of the score of environmental law violations of each of the users;

analyze the environmental credit score of the users to determine the one or more users with a high environmental credit score;

publish the environmental credit scores of the users and partners and notifying the users and partners;

identify one or more sites, partners, and verifiers associated with the site activity records collected by the or more components of the site devices;

extract data indicating a real-time data related to an environmental product declaration of at least one of the plurality of partners for each site device;

generate a display of a sensor listing for each site device, wherein each of the sensors is listed with its associated real-time data related to the environmental product declaration, wherein the generated display further comprises site identification information and partners identification information for each of the sensors of each of the site devices, wherein the generated display further comprises historical data over a period of time, wherein the generated display comprises graphical data;

define one or more alarm levels based on collected real-time data related to the environmental product declaration of an environmental activity offered by the at least one of the plurality of partners, wherein the one or more alarm levels are defined by one or more verifiers based on the collected real-time data related to the environmental product declaration; and

determine whether the collected data by the one or more sensors of the one or more site devices includes real-time data that meet any of the defined alarm levels, wherein at least one of the defined alarm levels is met, and further comprising generating an alarm notification and notify the one or more partners and one or more verifiers, wherein one or more verifiers are assigned to reverify the environmental product declaration when at least one of the defined alarm levels is met, and wherein the environmental activity offered by a partner of the partners is made unavailable to be completed by one or more users when at least one of the defined alarm levels is met.