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AMENDED CLAIMS

1. An unmanned aerial vehicle charging module comprising an unmanned aerial vehicle that comprises a first unmanned aerial vehicle ~~(battery)~~ electrode and a second unmanned aerial vehicle ~~(battery)~~ electrode, and

a landing platform that comprises

- a landing area for receiving the ~~(landing)~~ unmanned aerial vehicle, wherein the landing area comprises a predetermined charging region,
- a~~n (elongated)~~ first charging plate,
- a~~n (elongated)~~ second charging plate,

wherein the first charging plate and the second charging plate are arranged ~~(positioned)~~ in the predetermined charging region,

- an electrical energy storage device for connecting electrically with the first charging plate and with the second charging plate, and
- an unmanned aerial vehicle alignment mechanism ~~(for enclosing the landing area and)~~ for moving the ~~(landed)~~ unmanned aerial vehicle ~~(towards and)~~ into the predetermined charging region,

wherein the first unmanned aerial vehicle electrode electrically connects with the first charging plate and the second unmanned aerial vehicle electrode electrically connects with the second charging plate,

wherein the unmanned aerial vehicle alignment mechanism comprises

- a ~~(movable)~~ first beam,
- a ~~(movable)~~ second beam,
- a ~~(movable)~~ third beam,
- a ~~(movable)~~ fourth beam, and

- an actuation device for actuating at least two of the first beam, the second beam, the third beam, and the fourth beam to push the unmanned aerial vehicle into the charging region.

2. An unmanned aerial vehicle charging module comprising a landing platform that comprises
   - a landing area for receiving an ~~(landing)~~ unmanned aerial vehicle, wherein the landing area comprises a predetermined charging region,
   - a~~n (elongated)~~ first charging plate,
   - a~~n (elongated)~~ second charging plate,

   wherein the first charging plate and the second charging plate are arranged ~~(positioned)~~ in the predetermined charging region,
   - an electrical energy storage device for connecting electrically with the first charging plate and with the second charging plate, and
   - an unmanned aerial vehicle alignment mechanism ~~(for enclosing the landing area and)~~ for moving the ~~(landed)~~ unmanned aerial vehicle ~~(towards and)~~ into the predetermined charging region,

   wherein a first unmanned vehicle electrode of the unmanned aerial vehicle electrically connects with the first charging plate and a second unmanned aerial vehicle electrode of the unmanned aerial vehicle electrically connects with the second charging plate,

   wherein the unmanned aerial vehicle alignment mechanism comprises
   - a ~~(movable)~~ first beam,
   - a ~~(movable)~~ second beam,
   - a ~~(movable)~~ third beam,

- a ~~(movable)~~ fourth beam, and
- an actuation device for actuating at least two of the first beam, the second beam, the third beam, and the fourth beam to push the unmanned aerial vehicle into the charging region.

3. The unmanned aerial vehicle charging module according to claim 1 or 2, wherein the ~~(elongated)~~ first charging plate and the ~~(elongated)~~ second charging plate are arranged essentially parallel to each other.

4. The unmanned aerial vehicle charging module according to one of claims 1 to 3, wherein the first beam is arranged ~~(positioned)~~ substantially parallel to the second beam.

5. The unmanned aerial vehicle charging module according to claim 4, wherein the third beam is arranged ~~(positioned)~~ substantially parallel to the fourth beam.

6. The unmanned aerial vehicle charging module according to claim 5, wherein the third beam is arranged ~~(positioned)~~ substantially perpendicular to the first beam.

7. The unmanned aerial vehicle charging module according to one of claims 1 further comprising
a polarity switch for selectively connecting electrically the first charging plate with one of two terminals of the electrical energy storage device and for connecting electrically the second charging plate with the other one of the two terminals of the electrical energy storage device.

8. The unmanned aerial vehicle charging module according to one of the preceding claims, wherein the first charging plate and the second charging plate comprises essentially non-magnetic electrically conductive material.

9. The unmanned aerial vehicle charging module according to claim 8, wherein the essentially non-magnetic electrically conductive material comprises austenitic stainless steel.

10. The unmanned aerial vehicle charging module according to one of the preceding claims, the landing platform further comprising a movable cover for covering the landing area ~~(and/or the (landed) unmanned vehicle)~~.

11. The unmanned aerial vehicle charging module according to claim 10, wherein the movable cover comprises electrically insulating material ~~(that allows radio waves to pass through with low attenuation)~~.

12. The unmanned aerial vehicle charging module according to claim 11, wherein the electrically insulating material comprises canvas.

13. A storage unit for enclosing at least one unmanned aerial vehicle, the storage unit comprising

a container for enclosing the at least one unmanned aerial vehicle,

a first unmanned aerial vehicle charging module according to one of claims 10 to 12 for receiving the at least one unmanned aerial vehicle and for covering the received unmanned aerial vehicle,

at least one second unmanned aerial vehicle charging module according to one of claims 1 to 9 for receiving

the at least one unmanned aerial vehicle, the at least one second unmanned aerial vehicle charging module being movable into and outside the container,

wherein the at least one second unmanned aerial vehicle charging module is adapted to be stacked vertically, the first unmanned aerial vehicle charging module is adapted to be vertically stacked on top of the at least one second unmanned aerial vehicle charging module,

a camera for receiving a beacon unit light signal from the unmanned aerial vehicle, and

an unmanned aerial vehicle controller for selecting one unmanned aerial vehicle module from a group consisting of the first unmanned aerial vehicle module and the at least one second unmanned aerial vehicle charging module, and for generating a unmanned aerial vehicle flight instruction for landing the unmanned aerial vehicle on the selected unmanned aerial vehicle charging module according to light signal data from the camera and for sending out the unmanned aerial vehicle flight instruction to the unmanned aerial vehicle.

14. The storage unit according to claim 13 further comprising a mechanism for moving the at least one second unmanned aerial vehicle charging module ~~(into and outside of the container)~~.

15. The storage unit according to one of claim 13 to 14 further comprising a wind speed sensor ~~(anemometer)~~, wherein

the controller module is further adapted for generating the unmanned aerial vehicle flight instruction according to wind speed data from the wind speed sensor ~~(anemometer)~~.

16. The storage unit according to one of claims 13 to 15 further comprising
a wind direction sensor ~~(weather vane)~~, wherein
the controller module is further adapted for generating the unmanned aerial vehicle flight instruction according to wind direction data from the wind direction sensor ~~(weather vane)~~.

17. The storage unit according to one of claims 13 to 16 further comprising
a wireless communication unit for sending out the unmanned aerial vehicle flight instruction.

~~18. An unmanned vehicle module's landing and deployment system comprising of~~
~~a landing and deployment system~~
~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering~~

~~device of unmanned vehicle, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device~~

and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

a power module

-where the power module is a device that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a stand alone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters

~~that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~19. An unmanned vehicle module's landing and deployment system that is mentioned in Claim 18 and comprising of~~

~~a landing and deployment system~~

~~where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering~~

~~device of unmanned vehicle, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device~~

and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

a power module

-where the power module is an integrated device that has a stand-alone power module, a weather station, a communication/control module, and a smart charging device,

-where the stand alone power module is a device that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion

engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors

being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-where smart charging mechanism is comprised of multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned

vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,

20. An unmanned vehicle module's landing and deployment system that is mentioned in Claim 19 and comprising of

a landing and deployment system with a landing region that has precision landing mechanism such as a QR code

-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move

~~vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR code and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second~~

~~charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~a power module~~

~~-where the power module is an integrated device that has a stand-alone power module, a weather station, a communication/control module, and a smart charging device,~~

~~-where the stand alone power module is a device that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power~~

plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the

~~visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,~~

~~-where smart charging mechanism is comprised of multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power~~

~~module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~21. An unmanned vehicle module's landing and deployment system that is mentioned in Claim 20 and comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR code and recessed area~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the~~

~~opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR code and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR code that is located on the landing~~

platform for unmanned vehicle's precision landing functionality,

-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,

-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,

a smart charging mechanism,

-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the

~~electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~a power module~~

~~-where the power module is an integrated device that has a stand-alone power module, a weather station, a communication/control module, and a smart charging device,~~

~~-where the stand alone power module is a device that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the~~

unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of

~~humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,~~

~~-where smart charging mechanism is comprised of multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical~~

~~connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~22. An unmanned vehicle module's landing and deployment system that is comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR code and recessed area~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR code and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear

~~transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR code that is located on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,~~

~~-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,~~

~~-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system~~

~~-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle,~~

~~where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~an integrated remote box station (also known as Remobox) that provides a complete power and sensing solution for the landing platform and deployment system and for the unmanned vehicle,~~

-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units,

~~alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,~~

~~-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,~~

~~-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,~~

~~-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering~~

~~device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather~~

~~to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,~~

~~-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,~~

~~-a weed/plant killer device that is integrated with a insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,~~

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the~~

unmanned vehicle, and of all the other peripherals of the overall system,
a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,
a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,
a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,

23. An unmanned vehicle module's landing and deployment system that is provided in Claim 22 and comprising of
a landing and deployment system with a landing region that has precision landing mechanism such as a QR code and recessed area
-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for

~~further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR code and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR code that is located on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element~~

bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,

-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

a smart charging mechanism,

-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power

~~module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~an integrated remote box station (also known as Remobox) that provides a complete power and sensing solution, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,~~

~~-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,~~

~~-where the power modules are either standalone or hybridized devices that can provide electrical energy~~

~~to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,~~

~~-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,~~

~~-where the security or sensing device is a camera integrated to the Remobox station in order to monitor~~

~~the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,~~

~~-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,~~

~~-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device~~

and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,

-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with a insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,

a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,

a passive or an active thermal management device (with cooling and/or heating capability) to enable

~~the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~24. An unmanned vehicle module's landing and deployment system that is provided in Claim 23 and comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR code and recessed area~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering~~

~~device of unmanned vehicle, having the landing region with a QR code and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

-where the sensing device is a camera to visually detect the QR code that is located on the landing platform for unmanned vehicle's precision landing functionality,

-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,

-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

a smart charging mechanism,

-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle,

where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second

~~charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~an integrated remote box station (also known as Remobox) that provides a complete power and sensing solution, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,~~

~~-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer~~

integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,

-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,

-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering

~~device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather~~

~~to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,~~

~~-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,~~

~~-a weed/plant killer device that is integrated with a insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,~~

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the~~

~~unmanned vehicle, and of all the other peripherals of the overall system,~~
~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~
~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~
~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~25. An unmanned vehicle module's landing and deployment system that is provided in Claim 24 and comprising of~~
~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR code and recessed area and an improved charging mechanisms that are located both on the landing platform and on the unmanned vehicle,~~
~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable~~

~~base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR code and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating~~

~~materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the Remobox station, and all the other peripherals for further improved autonomous operations,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR code that is located on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,~~

~~-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,~~

~~-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and~~

deployment system's charging mechanisms to prevent electrical hazards to other peripherals,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

a smart charging mechanism,

-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle,

where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore

~~the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~an integrated remote box station (also known as Remobox) that provides a complete power and sensing solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,~~

~~-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,~~

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,

-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,

-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering

~~device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the**

unmanned vehicle or landing platform and deployment system or to the remote user,

-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,

-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary

~~functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,~~

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,~~

~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~26. An unmanned vehicle module's landing and deployment system that is provided in Claim 25 and comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR-code-like code generating device and recessed area and an improved charging mechanisms that are located both on the landing platform and on the unmanned vehicle,~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR-code-like code by using light illuminating devices and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close~~

doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,

- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,

-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,

-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the Remobox station, and all the other peripherals for further improved autonomous operations,

-where the a QR-code-like code by using light illuminating devices are used to generate a specific code to aid in the precision landing of the unmanned vehicle and this can be achieved by using the LED-light like devices in their multiple numbers with a control that turns on/off certain lights in order to generate a very specific pattern that would resemble a QR code,

an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,

~~-where the sensing device is a camera to visually detect the QR-code-like code that is generated on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,~~

~~-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,~~

~~-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and deployment system's charging mechanisms to prevent electrical hazards to other peripherals,~~

~~-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system~~

~~-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,~~

~~-where the unmanned vehicle's on-board powering device is electrically connected to its on-board~~

~~charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

an integrated remote box station (also known as Remobox) that provides a complete power and sensing solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,

-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel,

~~natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,~~

~~-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,~~

~~-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,~~

~~-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,~~

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment

~~system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,~~

~~-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,~~

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,

-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,

a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,

a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,

a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and

~~deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~27. An alternative embodiment of the unmanned vehicle module's landing and deployment system that is provided in Claim 26 and comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR-code-like code generating device and recessed area and an improved charging mechanisms that are located both on the landing platform and on the unmanned vehicle,~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the

~~power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR-code-like code by using light illuminating devices and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the~~

~~first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the Remobox station, and all the other peripherals for further improved autonomous operations,~~

~~-where the a QR-code-like code by using light illuminating devices are used to generate a specific code to aid in the precision landing of the unmanned vehicle and this can be achieved by using the LED-light like devices in their multiple numbers with a control that turns on/off certain lights in order to generate a very specific pattern that would resemble a QR code,~~

~~-where the exterior look of the landing and deployment system is designed to have a camouflaged texture for defense applications using the appropriate color/texture/markings such as green colored exterior or camo textured colored exterior, etc.,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR-code-like code that is generated on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears~~

such as legs for its easy self-alignment during the alignment process,

-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,

-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and deployment system's charging mechanisms to prevent electrical hazards to other peripherals,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

-where the exterior look of the unmanned vehicle is designed to have a camouflaged texture for defense applications using the appropriate

~~color/texture/markings such as green colored exterior or camo textured colored exterior, etc.,~~
~~a smart charging mechanism,~~
~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~
~~an integrated remote box station (also known as Remobox) that provides a complete power and sensing~~

~~solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,~~

~~-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,~~

~~-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells,~~

~~internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.~~

~~-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,~~

~~-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,~~

~~-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is~~

~~independent from the alignment of the unmanned vehicle on the landing platform,~~
~~-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the exterior look of the Remobox system is designed to have a camouflaged texture for defense applications using the appropriate color/texture/markings such as green colored exterior or camo textured colored exterior, etc.,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,~~

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,

-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,~~

~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~-where the exterior look of the canvas or sliding cover or a moving cover is designed to have a camouflaged texture for defense applications using the appropriate color/texture/markings such as green colored exterior or camo textured colored exterior, etc.,~~

~~28. An alternative embodiment of the unmanned vehicle module's landing and deployment system that is provided in Claim 26 and comprising of~~

~~a landing and deployment system with a landing region that has precision landing mechanism such as a QR-code-like code generating device and recessed area and an improved charging mechanisms that are located~~

~~both on the landing platform and on the unmanned vehicle,~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR-code-like code by using light illuminating devices and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear

~~transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the Remobox station, and all the other peripherals for further improved autonomous operations,~~

~~-where the a QR-code-like code by using light illuminating devices are used to generate a specific code to aid in the precision landing of the unmanned vehicle and this can be achieved by using the LED-light like devices in their multiple numbers with a control that turns on/off certain lights in order to~~

~~generate a very specific pattern that would resemble a QR code,~~

~~-where the exterior look of the landing and deployment system is designed to have the theme of a smart city concept using the appropriate color/texture/markings such as white-to-gray background color with gray text color and blue partial-text coloring for Singapore, etc.,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR-code-like code that is generated on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,~~

~~-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,~~

~~-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and deployment system's charging mechanisms to prevent electrical hazards to other peripherals,~~

~~-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for~~

its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

-where the exterior look of the unmanned vehicle is designed to have the theme of a smart city concept using the appropriate color/texture/markings such as white-to-gray background color with gray text color and blue partial-text coloring for Singapore, etc.,

a smart charging mechanism,

-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle,

where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the

landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

an integrated remote box station (also known as Remobox) that provides a complete power and sensing solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,

-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna,

and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in

order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,

-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,

-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the

~~unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the exterior look of the Remobox system is designed to have the theme of a smart city concept using the appropriate color/texture/markings such as white-to-gray background color with gray text color and blue partial-text coloring for Singapore, etc.,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of~~

humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,

-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed,

~~plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,~~

~~-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,~~

~~-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,~~

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,~~

~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~-where the exterior look of the canvas or sliding cover or a moving cover is designed to have the theme of a smart city concept using the appropriate color/texture/markings such as white-to-gray background color with gray text color and blue partial-text coloring for Singapore, etc.,~~

~~29. An alternative embodiment of the unmanned vehicle module's landing and deployment system that is provided in Claim 26 and comprising of a landing and deployment system with a landing region that has precision landing mechanism such as a QR-code-like code generating device and recessed area and an improved charging mechanisms that are located both on the landing platform and on the unmanned vehicle,~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second

~~alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR-code-like code by using light illuminating devices and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of~~

~~charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the Remobox station, and all the other peripherals for further improved autonomous operations,~~

~~-where the a QR-code-like code by using light illuminating devices are used to generate a specific code to aid in the precision landing of the unmanned vehicle and this can be achieved by using the LED-light like devices in their multiple numbers with a control that turns on/off certain lights in order to generate a very specific pattern that would resemble a QR code,~~

~~-where the exterior look of the landing and deployment system is designed to have the theme relevant to a construction-site concept using the appropriate color/texture/markings such as orange or yellow background color with properly angled black and orange or yellow stripes, etc.,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR-code-like code that is generated on the landing platform for unmanned vehicle's precision landing functionality,~~

-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,

-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of the unmanned vehicle from the landing platform during abnormal weathers,

-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and deployment system's charging mechanisms to prevent electrical hazards to other peripherals,

-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system

-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,

-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,

~~-where the exterior look of the unmanned vehicle is designed to have the theme relevant to a construction-site concept using the appropriate color/texture/markings such as orange or yellow background color with properly angled black and orange or yellow stripes,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts,~~

completes the charging and then stops the charging process,

an integrated remote box station (also known as Remobox) that provides a complete power and sensing solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,

-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells,

photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,

-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,

-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the

~~polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the exterior look of the Remobox system is designed to have the theme relevant to a construction-site concept using the appropriate color/texture/markings such as orange or yellow background color with properly angled black and orange or yellow stripes,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,

~~-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,~~

~~a fence with an active or passive deterring mechanisms such electrical shocking or some other deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,~~

~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~-where the exterior look of the canvas or sliding cover or a moving cover is designed to have the theme relevant to a construction-site concept using the appropriate color/texture/markings such as orange or yellow background color with properly angled black and orange or yellow stripes, etc.,~~

~~30. An alternative embodiment of the unmanned vehicle module's landing and deployment system that is provided in Claim 26 and comprising of a landing and deployment system with a landing region that has precision landing mechanism such as a QR-code-like code generating device and recessed area and an improved charging mechanisms that are located both on the landing platform and on the unmanned vehicle,~~

~~-where the landing and deployment platform is comprised of opening/closing doors to align the landed unmanned vehicle to a pre-determined landing region by using the doors or structures attached to the doors (where the doors are parallel to each other and have the capability of approaching or moving away from each other), a first and second alignment mechanisms (which is orthogonal to the opening/closing doors) that is located on a moveable base section (where the base section can move vertically or horizontally depending on the need) for further alignment of the unmanned vehicle to the pre-determined landing region (where the first and second alignment beams/structures are parallel to each other and have the capability of approaching or moving away from each other) and also electrically connecting the unmanned vehicle's on-board charging mechanism to the power module for charging of the on-board powering device of unmanned vehicle, having the landing region with a QR-code-like code by using light illuminating devices and a recessed area (which altogether located on the base section that has a resting seat at its fully rested state) and a camera located on the unmanned vehicle to detect this QR code for its precision landing, having the landing platform and~~

~~deployment system aiding in the following functions: deployment of the unmanned vehicle, receiving and landing of the unmanned vehicle, storage of the unmanned vehicle, charging of the unmanned vehicle, and other essential functionalities that are needed for the operation of the unmanned vehicle and the associated peripherals, motors, switches, linear transmission mechanisms, sensors, guiding rails, and other essential peripherals needed to open/close doors, move the first and second alignment mechanisms, lifting/descending the landing platform, etc. functions,~~

~~- where a solar cell module or photovoltaic module is integrated to the body of the landing platform and deployment system for generation of additional electrical energy,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.~~

~~-where smart charging mechanisms are installed on the first/second alignment mechanisms via attachment of charging structures with electrically insulating materials to further improve the smart charging mechanism by prevent electrical hazards that might be surfacing due to intimate contacts of the first/second alignment mechanisms and the moving mechanisms existing within the landing platform and deployment system,~~

~~-where the landing platform and deployment system has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the~~

~~Remobox station, and all the other peripherals for further improved autonomous operations,~~

~~-where the a QR-code-like code by using light illuminating devices are used to generate a specific code to aid in the precision landing of the unmanned vehicle and this can be achieved by using the LED-light like devices in their multiple numbers with a control that turns on/off certain lights in order to generate a very specific pattern that would resemble a QR code,~~

~~-where the exterior look of the landing and deployment system is designed to have the theme relevant to a certain locality using the appropriate color/texture/markings such as having sand colored exterior for desert areas such as a locality in Africa or forestry colored exterior for a particular city in the vicinity of jungles, etc.,~~

~~an unmanned vehicle with its sensing devices and integrated charging elements and rolling elements attached to its body,~~

~~-where the sensing device is a camera to visually detect the QR-code-like code that is generated on the landing platform for unmanned vehicle's precision landing functionality,~~

~~-where the unmanned vehicle has its on-board rolling elements such as rolling balls or rolling-element bearing that are integrated into its landing gears such as legs for its easy self-alignment during the alignment process,~~

~~-where the rolling elements integrated to the body of the unmanned vehicle places themselves into the recessed area of the landing platform for preventing of the accidental or unintentional skidding off of~~

~~the unmanned vehicle from the landing platform during abnormal weathers,~~

~~-where the rolling elements that are attached to the unmanned vehicle's body are electrically isolated from the unmanned vehicle's and landing platform and deployment system's charging mechanisms to prevent electrical hazards to other peripherals,~~

~~-where the unmanned vehicle's charging elements are integrated into the body of the unmanned vehicle for its easy contact to the charging mechanism located on the landing platform and deployment system~~

~~-where the unmanned charging elements are made of electrically conductive elements such as aluminum, copper, or any other relevant and electrically conductive materials (including the electrically conductive plastics, polymers, composites, ceramics, etc.) and establishing the electrical contact with the charging plates by physically touching each other,~~

~~-where the unmanned vehicle's on-board powering device is electrically connected to its on-board charging elements with wires, cables, etc. in order to transfer the electrical energy from the power module,~~

~~-where the exterior look of the unmanned vehicle is designed to have the theme relevant to a certain locality using the appropriate color/texture/markings such as having sand colored exterior for desert areas such as a locality in Africa or forestry colored exterior for a particular city in the vicinity of jungles, etc.,~~

~~a smart charging mechanism,~~

~~-where there exists multiple charging mechanisms such as one of the charging mechanism being located on the~~

landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,

an integrated remote box station (also known as Remobox) that provides a complete power and sensing solutions including security of the station, and also have additional interfaces to receive electricity from multiple different sources for the landing platform and deployment system and for the unmanned vehicle,

-where the Remobox station is comprised of standalone power modules such as fuel cell systems, batteries, or other powering devices, have the capability of receiving electrical energy from multiple different sources in its vicinity, a security or sensing device such as a camera, a polarity switch (also known as switchable rectifier), and advanced weather station, a communication/control module, a weed/plant killer integrated with an insecticide/pesticide killer device, a communication device such as an antenna, and a source of renewable power such as solar cells or photovoltaic cells module,

-where the power modules are either standalone or hybridized devices that can provide electrical energy to the unmanned vehicle's on-board powering device via polarity switch and charging mechanisms installed on the landing platform and deployment system and on the unmanned vehicle and can be a standalone device or a hybrid combination of the followings such an electric power supply that is connected to the grid and where the electricity is obtained from fossil fuel power plants, hydroelectric power plants, solar thermal power plants, nuclear power plants, geothermal power plants, wind power towers and etc., batteries, or power devices such as solar cells, photovoltaic cells, wind generators, hydro-generators, flywheels, stand-alone petrol, diesel, natural gas, bio-mass fueled gen-sets, thermoelectric generators, thermo-ionic generators, fuel cells, internal combustion engines, solar power, photovoltaic arrays, hydrothermal power, radioisotope or radioactive power systems, nuclear fission based power generators, thermal energy conversion devices, Stirling convertors, Brayton converters, Rankine

converters, micro-miniature dynamic power converters that are integrated with radioisotope heater units, alpha/beta-voltaic energy conversion devices, bio-inspired power generation devices, etc. that are directly connected to the power module that is connected to the landing platform and deployment system with a smart charging device,

-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where its additional interfaces allows the transfer of electrical energy from sources existing nearby such as a solar farm or a wind farm or any other renewable or un-renewable power producing devices or power plants,

-where the security or sensing device is a camera integrated to the Remobox station in order to monitor the security and maintenance related activities and also providing a virtual-line-of-sight to the unmanned vehicle, to the landing platform and deployment system or to the remote operator such the pilot in order to meet the local aviation regulations,

-where the polarity switch has smart functions and is integrated into one of the modules located within the Remobox station, has multiple states of operation, and enables the safe charging of the unmanned vehicle by controlling the polarity circuitry that is independent from the alignment of the unmanned vehicle on the landing platform,

-where smart charging mechanism is comprised of multiple charging mechanisms (and integrated with a polarity switch with multiple operating) states such

~~as one of the charging mechanism being located on the landing platform and deployment system and the second one being located on-board of the unmanned vehicle, where the first charging mechanism allows the electrical contact to be made between the power module and the charging elements integrated into the body of the unmanned vehicle via metallic contacts of the first/second alignment mechanisms, and the second charging mechanism that is located on-board of the unmanned vehicle that enables the electrical connection be made between the on-board powering device and the charging mechanism located on the landing platform and deployment system, furthermore the charging mechanisms are connected to a power module with polarity switches in order to safely charge unmanned vehicle's the on-board powering device and also prevent the electrical shorting of the unmanned vehicle's the on-board powering device and power module, the charging mechanism have multiple states of charging depending on the orientation of the unmanned vehicle after its landing where it can automatically sense the polarity of the unmanned vehicle's battery terminals or the voltage and then open or close the appreciate switches of the polarity switch in order to initiate the proper charging without creating any electrical shorts, completes the charging and then stops the charging process,~~

~~-where the exterior look of the Remobox system is designed to have the theme relevant to a certain locality using the appropriate color/texture/markings such as having sand colored exterior for desert areas such as a locality in Africa or forestry colored~~

~~exterior for a particular city in the vicinity of jungles, etc.,~~

~~-where the advanced weather station is comprised of either single or multiple sensors that are needed to safely operate the landing platform and deployment system and the unmanned vehicle in the field, where the sensors are comprised of a wind direction sensor to determine the direction of the wind, a wind speed sensor to determine the speed of the wind, a temperature sensor to determine the weather temperature, a rain sensor to determine the presence of rain, a humidity sensor to determine the level of humidity present, a pressure sensor to determine the atmospheric pressure, a solar radiation measuring sensor, a disdrometer to monitor the drop size variation, a transmissometer for measuring the visibility around landing platform and deployment system, a UV light measuring sensor, a ceilometer for measuring the cloud ceiling the a hyper-local weather to accurately estimate the local weather conditions, a dew-point measuring sensor, having these sensors being able to self-calibrate themselves, having the wireless or wired communication in order to feed either individual or aggregated sensor data to the unmanned vehicle or landing platform and deployment system or to the remote user,~~

~~-where the weather station sensors have their own power modules such batteries, solar cells, photovoltaic cells, or batteries that are charged by solar or photovoltaic cells, or some other power solutions,~~

~~-where the solar cell module(s) have the capability of staying planar or moving around a certain axis in~~

order to keep the surface of the solar cell clean, improve the solar energy collection efficiency, etc.

-where the communication/control module is comprised of the essential communication and control devices that are needed to operate, manage, monitor all of the functions of the landing platform and deployment system, the unmanned vehicle, the integrated power module, smart landing and self-alignment of the unmanned vehicle, smart charging of the unmanned vehicle, etc.,

-a weed/plant killer device that is integrated with an insecticide/pesticide killer device that controls and prevents the undesired vegetation such as weed, plants, etc., and other small animals such as ants, spiders, geckos, etc. that may establish blockage for the operation of the landing platform and deployment system by covering the externals or creating some sort of a short-circuiting events within the landing platform and deployment system or the associated peripherals,

-where the security sensing device installed to the Remobox station is an anti-theft device or an anti-tamper device that alerts the owner or the user of the landing platform and deployment system, the unmanned vehicle and all the other associated peripherals for security or safety breach issues,

-where the Remobox station has its own processing unit to control its own functionality, the necessary functions of the unmanned vehicle, the necessary functions of the landing platform and deployment system, and all the other peripherals for further improved autonomous operations,

a fence with an active or passive deterring mechanisms such electrical shocking or some other

~~deterring mechanisms to maintain the safety of the landing platform and deployment system, of the unmanned vehicle, and of all the other peripherals of the overall system,~~

~~a security device such as an anti-theft device or an anti-tamper device that notifies the operator for the situations of security breach related issues,~~

~~a passive or an active thermal management device (with cooling and/or heating capability) to enable the thermal management of the landing platform and deployment system and thermal management of the Remobox station for different weather or climate conditions,~~

~~a canvas or a sliding cover or a moving cover that covers the landing platform and deployment system for its protection and also aid in the landing of the unmanned vehicle by protecting against wind during its landing process,~~

~~-where the exterior look of the canvas or sliding cover or a moving cover is designed to have the theme relevant to a certain locality using the appropriate color/texture/markings such as having sand colored exterior for desert areas such as a locality in Africa or forestry colored exterior for a particular city in the vicinity of jungles, etc.,~~