WHAT IS CLAIMED IS:

1. A wellsite system comprising:

a control workstation;

a fluid pump unit comprising a first rotary actuator and first sensors, wherein the first sensors generate data indicative of surface fluid flow rate, surface fluid pressure, and surface fluid temperature;

a conveyance device comprising a conveyance line, a second rotary actuator, and second sensors, wherein the second sensors generate data indicative of surface depth of a tool string within a wellbore, surface conveyance speed of the tool string within the wellbore, and surface line tension of the conveyance line;

the tool string conveyed and comprising third sensors generate data indicative of downhole operational parameters of the tool string and environmental parameters affecting the tool string within the wellbore, wherein the third sensors include:

a downhole tension sensor generating data indicative of tension experienced by the tool string;

a temperature sensor generating data indicative of ambient temperature of fluid surrounding the tool string within the wellbore;

a pressure sensor generating data indicative of downhole pressure of the fluid surrounding the tool string within the wellbore;

a depth sensor generating data indicative of depth of the tool string within the wellbore; and

a speed sensor generating data indicative of downhole conveyance speed of the tool string within the wellbore; and

a processing device communicatively connected with the first and second rotary actuators, the conveyance device, the tool string, and the first, second, and third sensors, wherein the processing device:

receives target values of operational parameters entered into the processing device by a wellsite operator via the control workstation, wherein the target values include:

a target depth of the tool string within the wellbore;

a target conveyance speed of the tool string within the wellbore;

a target fluid flow rate output by the fluid pump unit into the wellbore;

a target conveyance line tension; and

a maximum conveyance line tension threshold;

receives physical characteristics of the wellsite system entered into the processing device by the wellsite operator via the control workstation, wherein the physical characteristics include:

mass of the tool string;

a coefficient of friction of the tool string against passing fluid;

elasticity of the conveyance line;

mass per unit length of the conveyance line;

density of the fluid being pumped by the fluid pump unit;

viscosity of the fluid being pumped by the fluid pump unit;

physical parameters of the wellbore; and

a coefficient of friction of a casing of the wellbore against the tool string and passing fluid; and

controls conveyance of the tool string within the wellbore via cooperative control of the fluid pump unit and the conveyance device based on:

each measurement from the first, second, and third sensors;

each target value; and

each physical characteristic of the wellsite system.

2. The wellsite system of claim 1 wherein the downhole tension sensor comprises a load cell.

3. The wellsite system of claim 1 wherein the target conveyance line tension is a target surface conveyance line tension.

4. The wellsite system of claim 1 wherein the target conveyance line tension is a target downhole conveyance line tension.

5. The wellsite system of claim 1 wherein the maximum conveyance line tension threshold is a maximum surface conveyance line tension threshold.

6. The wellsite system of claim 1 wherein the maximum conveyance line tension threshold is a maximum downhole conveyance line tension threshold.

7. The wellsite system of claim 1 wherein the target conveyance speed of the tool string is selected to automatically vary along different portions of the wellbore based on the physical parameters of the wellbore.

8. The wellsite system of claim 1 wherein the target conveyance line tension is a target surface conveyance line tension.

9. The wellsite system of claim 8 wherein the maximum conveyance line tension threshold is a maximum surface conveyance line tension threshold.

10. The wellsite system of claim 9 wherein the target conveyance speed of the tool string is selected to automatically vary along different portions of the wellbore based on the physical parameters of the wellbore.

11. The wellsite system of claim 1 wherein the target conveyance line tension is a target downhole conveyance line tension.

12. The wellsite system of claim 11 wherein the maximum conveyance line tension threshold is a maximum downhole conveyance line tension threshold.

13. The wellsite system of claim 12 wherein the target conveyance speed of the tool string is selected to automatically vary along different portions of the wellbore based on the physical parameters of the wellbore.

~~1. An apparatus comprising a control system having a processor and a memory storing computer program code, wherein the control system is configured to be communicatively connected with a fluid pump disposed at a wellsite surface and with~~

~~a conveyance device disposed at the wellsite surface, and wherein the control system is operable to:~~

~~cause the conveyance device to unwind a conveyance line connected with a tool string disposed within a wellbore; and~~

~~cause the fluid pump to pump a fluid into the wellbore such that the fluid moves the tool string along the wellbore while the conveyance device unwinds the conveyance line.~~

~~2. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance device to vary a rate at which the conveyance line is unwound to vary a speed at which the tool string moves along the wellbore.~~

~~3. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore at an intended speed.~~

~~4. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore at a substantially constant speed.~~

~~5. The apparatus of claim 1 wherein the control system is further operable to:~~

~~determine a speed at which the tool string is to be conveyed along the wellbore; and~~

~~cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore at the determined speed.~~

~~6. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance device to vary a rate at which the conveyance line is unwound to vary a tension that the conveyance line applies to the tool string.~~

~~7. The apparatus of claim 1 wherein the control system is further operable to cause the fluid pump to vary a flow rate of the fluid pumped into the wellbore to vary tension that the conveyance line applies to the tool string.~~

~~8. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and/or the fluid pumping such that the conveyance line applies a substantially constant tension to the tool string.~~

~~9. The apparatus of claim 1 wherein the control system is further operable to:~~
~~determine tension that the conveyance line is to apply to the tool string while the tool string is conveyed along the wellbore; and~~
~~cause the conveyance line unwinding and the fluid pumping such that the conveyance line applies the determined tension to the tool string.~~

~~10. The apparatus of claim 1 wherein the control system is operable to cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore at an intended speed and the conveyance line applies an intended tension to the tool string.~~

~~11. The apparatus of claim 1 wherein the control system is operable to cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore at a substantially constant speed and the conveyance line applies a substantially constant tension to the tool string.~~

~~12. The apparatus of claim 1 further comprising a downhole tension sensor disposed in association with the tool string, wherein:~~
~~the downhole tension sensor is operable to facilitate measurement of tension applied by the conveyance line to the tool string;~~
~~the control system is communicatively connected with the downhole tension sensor; and~~
~~the control system is operable to cause the conveyance line unwinding and the fluid pumping based on the measurement of tension.~~

~~13. The apparatus of claim 1 further comprising a downhole position sensor disposed in association with the tool string, wherein:~~
~~the downhole position sensor is operable to facilitate measurement of a speed at which the tool string moves along the wellbore;~~

~~the control system is communicatively connected with the downhole position sensor; and the control system is operable to cause the conveyance line unwinding and the fluid pumping based on the measurement of speed.~~

~~14. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and the fluid pumping such that the tool string moves along the wellbore without sticking to a sidewall of the wellbore.~~

~~15. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and the fluid pumping such that tension applied by the conveyance line to the tool string remains below a predetermined threshold.~~

~~16. The apparatus of claim 1 wherein the control system is further operable to cause the conveyance line unwinding and the fluid pumping such that:~~

~~the tool string moves along the wellbore without sticking to a sidewall of the wellbore; and~~

~~tension applied by the conveyance line to the tool string remains below a predetermined threshold.~~

~~17. The apparatus of claim 1 wherein, in response to the tool string sticking to a sidewall of the wellbore, the control system is further operable to cause the conveyance device to vary a rate at which the conveyance line is unwound.~~

~~18. The apparatus of claim 1 wherein, in response to the tool string sticking to a sidewall of the wellbore, the control system is further operable to cause the fluid pump to vary a flow rate of the fluid being pumped into the wellbore.~~

~~19. The apparatus of claim 1 wherein, in response to tension applied by the conveyance line to the tool string exceeding a predetermined threshold, the control system is further operable to cause the conveyance device to vary a rate at which the conveyance line is unwound.~~

~~20. The apparatus of claim 1 wherein, in response to tension applied by the conveyance line to the tool string exceeding a predetermined threshold, the control system is further operable to cause the fluid pump to vary a flow rate of the fluid being pumped into the wellbore.~~

~~21. The apparatus of claim 1 further comprising a wellsite system comprising:~~
~~the fluid pump fluidly connected with the wellbore;~~
~~the conveyance device;~~
~~the tool string; and~~
~~the conveyance line connected with the conveyance device and the tool string.~~

~~22. A method comprising:~~
~~commencing operation of a control system for controlling:~~
~~a fluid pump disposed at a wellsite surface; and~~
~~a conveyance device disposed at the wellsite surface;~~
~~wherein operation of the control system:~~
~~causes the conveyance device to unwind a conveyance line connected with a tool string disposed within a wellbore; and~~
~~causes the fluid pump to pump a fluid into the wellbore such that the fluid moves the tool string along the wellbore while the conveyance device unwinds the conveyance line.~~

~~23. The method of claim 22 wherein operation of the control system further causes the conveyance device to vary a rate at which the conveyance line is unwound to, thereby, vary a speed at which the tool string moves along the wellbore.~~

~~24. The method of claim 22 wherein operation of the control system further causes the conveyance device to vary a rate at which the conveyance line is unwound to, thereby, vary tension that the conveyance line applies to the tool string.~~

~~25. The method of claim 22 wherein operation of the control system further causes the conveyance line unwinding and the fluid pumping such that the tool string moves~~

along the wellbore at an intended speed and the conveyance line applies an intended tension to the tool string.

26. The method of claim 22 wherein operation of the control system further causes the conveyance line unwinding and the fluid pumping such that:

the tool string moves along the wellbore without sticking to a sidewall of the wellbore; and/or

tension applied by the conveyance line to the tool string remains below a predetermined threshold.

27. The method of claim 22 wherein:

in response to either:

the tool string sticking to a sidewall of the wellbore; or

tension applied by the conveyance line to the tool string exceeding a predetermined threshold;

operation of the control system further causes:

the conveyance device to vary a rate at which the conveyance line is unwound; and/or

the fluid pump to vary a flow rate of the fluid being pumped into the wellbore.