TechnoDolly 15

The fully automated TechnoDolly features three telescopic crane beams, mounted on a mobile base with pneumatic wheels. The gyroscopic stabilized TechnoheadS provides precise pan and tilt capabilities, supporting cameras with a payload of up to 35 kg or 77 lbs. Operators can completely program and control the crane directly from a workstation.

TELESCOPIC CRANE BEAMS

The telescopic arm unit consists of three aluminum beams, equipped with precision stainless steel rails and rollers. These beams extend and retract to telescope the camera within a range of 3 to 14 feet, and at a speed of up to 2.5 feet per second. The telescopic arm unit will be capable of smooth telescoping and tilting, powered by multiple electric motors delivering peak torque of 500 Nm.

SPECIFICATIONS OF THE TELESCOPIC ARM	
Max. lens height when fully over-slung	**18 ft**
Max. lens height under-slung	**14 ft**
Min. length from center	**3 ft**
Max. length from center	**14 ft**
Max. telescopic movement	**11 ft**
Max. speed	**2.5 ft/s**
Max. weight of the telescopic arm	**130 kg**
Max. weight of the electronic column	**250 kg**
Total weight including any camera and lens up to 13 kg	**900 kg**

CRANE BASE

The crane base will move along track rails using an electric motor. A second motor in the base allows the fully automated TechnoDolly to swivel smoothly. Since TechnoDolly will be used in live sound environments, they will operate quietly for sound recording. The base will move smoothly and reach speeds of up to 5.5 feet per second. It can travel on up to 6 sections of track, each 10 feet long, allowing for a total travel distance of up to 60 feet.

SPECIFICATIONS OF THE BASE AND TRACKS	
Number of tracks	**up to 6**
Length of each track	**10 ft**
Total length of track	**60 ft**

TECHNOHEADS

The automated crane design and software ensures that the camera can pan and tilt smoothly. Fiber-optic gyros will stabilize the camera head and reduce vibrations. The camera head will support cameras and teleprompters, with a combined weight of up to 35 kg.

The system will:

1. Control Fujifilm and Canon broadcast zoom lenses
2. Control prime and cine lenses
3. Scale any lens
4. Utilize fiber-optic gyros
5. Allow user-definable limits

DESK

The automated crane will be controllable by an operator using a joystick and programmable via an operator's monitor. Camera movements will be easily and intuitively programmed with keyframes. The crane's software will combine those keyframes with spline interpolation to create smooth, precise camera movements. The software will allow unlimited camera moves to be saved and recalled at any time for all previously saved programmed moves.

OPERATION SOFTWARE

The TechnoDolly operation software provides the following:

1. **Keyframe programming** – allows sampling of keyframes, and playback of multiple camera and crane parameters
2. **Unlimited key frames** – infinite number of recordable key frames
3. **Unlimited number of moves** – infinite number of recordable moves
4. **Recording manual moves** – operate as you would a Technocrane or fixed arm, recordable for playback
5. **Override during automatic move** – pan, tilt, roll, zoom and focus can be adjusted while a move is playing back
6. **Recording override** – edit a recorded live move to clean up certain parameters
7. **Import and export of FBX files** – model and create moves off-line in virtual space to create more efficient use of studio time
8. **Trigger** – trigger a recorded move to start and run with full automation
9. **Trigger according to timecode** – trigger a recorded move based on operator-defined time code parameters. For example: starting a move synchronously to music.
10. **Stop motion** – the ability to move only one frame on the path. For example: to make animated films.
11. **Shift the move** – shift the move higher or lower, forward, or backwards in three-dimensional space to adjust for certain changes in the environment
12. **Scale the move** – scale up or down the dimensional size of the move itself
13. **Rotate the move** – rotating the programmed move, up to 360°

14 **Matrix Mode** – in one example: the TechnoDolly could have four key positions: a close-up, a wide shot, a long shot, and an over-the-shoulder. Matrix Mode allows the operator to move freely between any of these positions, enabling seamless coverage with a single operator. Ideal for long-form talk, news and entertainment.

15 **TV-studio offsets** – a news program has speakers and guests of different heights. By specifying the size in the TV studio offsets, the TechnoDolly's moves are automatically adjusted to the size of the speakers and guests.

16 **Remote access to the crane** – access to the crane via internet for diagnostic purposes

17 **Tracking data with UDP** – export all positional data for use with virtual or augmented reality environments

18 **Track data in FreeD for Unreal** – export all positional data for use with virtual or augmented reality environments

19 **Tracking offsets** – aligning tracking data with virtual environments, so rendered elements match the real-world TechnoDolly movement precisely

20 **Shutter In** – syncing the camera's shutter pulse with the TechnoDolly ensures precise starting points for each move. Required for multi-pass motion control. Seamless layering of infinite takes with perfect alignment.

21 **Gen Lock In** – ensures that the tracking data is fully synchronized with a studio's genlock signal. This is especially crucial for LED studios, where precise timing between camera movement and the render engine is essential for seamless real-time compositing.

22 **Built-in time code generator** – after jamming the crane's built-in time code generator to the camera's time code, the tracking data is frame-accurately stamped, ensuring perfect synchronization for post-production and VFX integration