

Skyrob™: Making OPGW Stringing Safe

Skyrob™ is a first-of-its-kind semi-autonomous robot in India, developed by Sterlite Power to ensure safety of 'high-risk' operations of installation, inspection and maintenance of OPGW under 'live-line' conditions.



THE CHALLENGES

The power scenario in the country is expanding in leaps and bounds. As greater number of powerlines are installed, more maintenance and repair work will be required at shorter time durations. Moreover, out of the total 4,98,651 km of total EHV lines throughout India, as much as 50% is yet to be fiberised. The fiberisation of the remaining lines is critical for the Digital India vision to come true. A broadly practiced conventional method of OPGW installation is called 'Cradle block method' – the methodology of using traction machine for the installation.

However, the conventional methods come with quite a few limitations. A study shows that between 17 to 23 workers employed in the construction of EHV systems die over a working lifetime of 45 years. With Skyrob™, Sterlite Power primarily aims at eliminating human and asset risk by almost 100%.

WHAT WE DID

Sterlite Power developed Skyrob™ – a semi-autonomous robot ensures safety of 'high-risk' operations involved in the installation, inspection and maintenance of OPGW on high-voltage power transmission lines under 'live-line'

(energised-without shutting down the power lines) conditions.

Skyrob™ demonstrates the application of high-end robotics in the power transmission sector for the first time in India. Apart from ensuring safety, it helps in saving time and ensures

high-quality project delivery for our customers. It performs visual inspection and health monitoring of existing wires and conductors of the transmission line. This indigenously developed robot helps in installing OPGW on overhead transmission lines in an efficient and timely manner.

Achievements

Safety: With Skyrob™, Sterlite Power directly eliminates human and asset risk by almost 100%.

Efficiency: The improved efficiency of Skyrob™ also enables us to address the coinciding challenges of time, space and capital for our customers. With this innovation, we have been able to reduce project timelines by ~25%. In addition, the automation brought in by the innovation has enabled us in reduction of mobilisation of manpower by ~50%. Conventionally, OPGW stringing task required a team of 30 skilled labourers and 1 engineer. With Skyrob™, we can now accomplish the same task with only 15 skilled labourers and

an engineer. The innovation also reduces cost of upgradation.

Automation: The increased automation brought in by Skyrob™ has decreased human intervention and created a safer work environment. This, in turn, has a positive impact on the workmen in field.

Ease of working: With 50% lower dead weight and higher traction vis-à-vis conventional traction machine, this technology has made operation of the tool easier. With Skyrob™, OPGW stringing has become a seamless activity.