

Report on First Internship Program under AICTE-ECI Internship Framework

IndSTT-DCI Walkover Tracker Training Program

3th July 2017- 17th August 2017



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Executive Summary:

IndSTT is now taking up a major initiative of training engineering students. IndSTT is member of the apex Indian Engineering Guild, Engineering Council of India (ECI) which is created for professionalization of Engineering Operations. Recently ECI has entered an MoU for conducting internships with Indian Government Technical Education Regulator, AICTE (<http://www.aicte-india.org/downloads/eci.pdf>). This MoU authorises ECI and its member associations to provide compulsory internships to students of AICTE approved programs. Total number of candidates for these training programs are close to 2.5 million each year. It is a giant step, and IndSTT, jointly with other 31 technical societies / associations, would be contributing its bit in this major national training initiative by providing some of these trainings in trenchless sector. As trenchless technology is a borderless profession, IndSTT has been inviting Global Trenchless Stake holders to join this movement by working in partnership with IndSTT. Current program is aimed at enhancing the employability of engineering degree and diploma holder through internship training in the field of walkover tracking works essential for the success of horizontal directional drilling operations.

Program Introduction:

Application of Trenchless Techniques requires deployment of properly trained and skilled individuals. Workmen Training, therefore assumes greater significance in the success of Trenchless Projects. In India, IndSTT conducts several training programs for this sector. Through those training programs, individuals are prepared to work at different levels & capacities in Indian trenchless sector.

In addition to assisting the sector in getting such candidates, these programs help such candidates in being gainfully employed in the sector as well. Organizations interested to meeting their corporate social responsibilities requirements generally take benefits of such programs by sponsoring candidates in such programs.

Current program is one of such program where DCI India Private Limited has commissioned IndSTT to train & prepare 25 individuals, for the competences of Walkover Tracker with a special emphasis on advanced locating techniques & latest developments in the sector.

IndSTT-DCI Memorandum of Agreement (MoA):

INDSTT entered into training arrangement with the sponsoring organization DCI. Pictures of agreement signing event are attached as attachment-1

Upon entering into the agreement DCI released the grant sum of Rs, 5,54,000/- (Rupees Five Hundred Fifty Four Thousand Only) to IndSTT to initiate the program (The breakup of the grant was 5,50,000/- for Training & 4,000/-for screening test costs.).

Upon receipt of the agreement & grant funds, IndSTT initiated candidate enrollment in line with agreed selection procedure as above.

Upon completion of the batch formation of the 25 candidates the training program was initiated at IndSTT training centre at Faridabad Haryana. The training is being imparted in line with the structure outlined.



Various Salient Features of Agreement:

1.	Trade Name:	Trenchless Technology - Walkover Locating Trade
2.	The total number of candidates for this CSR program:	25
3.	Program duration:	45 days
4.	Program Fee:	Rs. 22,000/- per candidate only, which includes training, boarding & lodging costs.
5.	Minimum qualification required for this program:	Diploma in Civil/Electrical/Mechanical Engineering.
6.	Candidates enrolled under this scheme are be provided training through theory & practical in class room as well as at project sites.	
7.	Project/site works of the enrolled candidates is being decided in consultation with the sponsoring organization (DCI) to develop the job opportunities.	
8.	Candidates enrolled under the scheme shall be termed as the Walkover Locating Trainee.	
9.	Candidates fee has been paid by the sponsoring organization DCI	
10.	INDSTT is communicating with the nominated officer of the sponsoring organization DCI for all the student related matters.	
11.	Certification shall be provided to successful candidates by INDSTT upon conclusion of training.	
12.	Tracking & locating equipment shall be provided by the Sponsoring organizations on returnable basis.	

Indian Technical Education Scenario:

Indian Technical Education Scenario

In India, technical education contributes a major share to the overall education system and plays a vital role in the social and economic development. Technical education is imparted at various levels such as: craftsmanship, diploma, degree, post-graduate and research in specialized fields, catering to various aspects of technological development and economic progress in India. Volume wise, Indian Engineering and Technology education sector is one of the largest national higher education initiative with an annual graduation strength exceeding 2.5 million catering to all sections of trade and industry. This national initiative is regulated by **All India Council for Technical Education (AICTE)**. With such vast numbers, interventions of AICTE need to be supplemented by the industry constituents and technology promotion organizations. In India, this assistance is being provided through internships and now a major initiative has been taken by AICTE by partnering with **Engineering Council of India** so that the output of graduates could be enhanced and thereby their employability.

All India Council for Technical Education

AICTE was established in November 1945 to survey on the facilities on technical education and to promote development in the country in a coordinated and integrated manner. And to ensure the same, as stipulated in, the National Policy of Education (1986), AICTE be vested with statutory authority for planning, formulation and maintenance of norms and standards, quality assurance through accreditation, funding in priority areas, monitoring and evaluation, maintaining parity of certification and awards and ensuring coordinated and integrated development and management of technical education in the country. In the year 1987, AICTE became a statutory body through an Act of Indian Parliament. Its objectives include proper planning and co-ordinated development of the technical education system throughout the country, the promotion of qualitative improvement of such education in relation to planned quantitative growth and the regulation and proper maintenance of norms and standards in the technical education system for matters connected therewith. AICTE has been empowered to take all such steps as it may think fit for ensuring coordinated and integrated development of technical and management education and maintenance of standards and for the purposes of performing its functions. Internships with ECI is one of such steps which is expected to transform the technical and management education sector from its current enviable position. AICTE details could be accessed from its website <http://www.aicte-india.org>.

Engineering Council of India

ECI is registered as a Not-for-profit Society under the Societies Registration Act, 1860, and is the prime institution to standardize and harmonize, in various major engineering disciplines, professional practices in India and competency standards of practicing professionals with their counterparts in other member countries of WTO, having among their founding members Planning Commission (Now NITI Aayog), All India Council for Technical Education (AICTE), National Board of Accreditation (NBA), Central Public Works Department (Ministry of Urban Development), Department of Commerce (Ministry of Commerce & Industry), Dept. of Secondary and Higher Education (Ministry of HRD), Department of Scientific and Industrial Research, Council of Scientific & Industrial Research & several other Professional Institutions. ECI members, individually, are engaged in different trainings, and with subject MoU would also get involved in the collective national movement. A detailed list of its members and other details are hosted on ECI website www.ecindia.org.

Need of internships in Indian Perspective and Profile of Candidates

The technological advancement and rapid growth of the Indian industrial sector requires professional education system to continuously update and upgrade at a matching pace, so that the learners are well trained in modern technologies and can adopt innovation to meet the challenges. However, due to substantially vast numbers of learners from various technology and management streams and limited

resources, the professional institutions like engineering or management colleges and Universities are finding the updating the education systems and skilling of enrolled students somewhat difficult.

In many cases, due to poor knowledgebase, the passed-out graduates are unable to render appropriate services to Industry and are either under-employed or at times left without any employment. These individuals, who otherwise could have been a better professional, could not grow due to shortcomings of their educational institutions.

This situation is of no-win for all, the industry is unable to get quality manpower, and is forced to engage under-qualified individuals and delivering erroneous or bad quality products at one end of this chain, and the candidates, who despite having invested their time and monies, are not adequately skilled to deliver appropriate services to their employers and in turn remain under or un-employed at other end of this chain. The society, in totality, loses a lot as at one end valuable resources are being spent on creating lower valued human assets, and at other, the outputs of these undertrained individuals results in more losses for the society.

The need today is to create learning opportunities so that graduating candidates are empowered and made adequately employable. These opportunities are now being made available to learners through these internships by AICTE jointly with ECI and its Member Associations. Such ECI members, like IndSTT, who until now, were conducting such programs in a limited manner, are now included in the formal education system as participation in their internship programs are proposed to be made mandatory for the award of the degrees from Indian Universities.

Trenchless Internship Program for Engineering Students & Faculty Members

In an endeavour to provide quality manpower to the trenchless industry and to enhance professional performance of fresh engineers, IndSTT, jointly with trenchless construction industry stakeholders, has been offering variety of internship programmes for the students and faculty members from the core engineering disciplines for the last few years. IndSTT is providing this training in trenchless technology sector with a view to helping the growth of, both learners, as well as trenchless technology sector. The systematic approach of these programmes, with emphasis on the specific needs of the industry on a real-time basis, enables learners to acquire additional knowledge and exposure beyond conventional education, and enhance their employability hence providing the value addition to Industry.

Internship Process and Expected outcomes

Approved internship programme duration is of six (6) months with five (5) months of onsite/on job training with companies, and 15 days each of pre-and post-internship training and submission of project report to a grand internship jury. Currently, the pre-and post-internship training and project

report submission to a grand jury is done at IndSTT corporate office and training centre at Faridabad, Haryana. With this MoU in place, these activities shall be performed at number of places, both in India and overseas as well.

Currently, upon joining the program, the candidate is put through the pre-internship training after which the learner is deputed for the five months to a host organization. The industry partners supporting this programme work as the host organizations. The program envisages that the host organization will locate the intern engineer or manager at its sites or to works locations as may be appropriate for a period of five months. Upon conclusion of five months of on-site/on-job training, the candidate is required to return the central training centre, prepare the internship report, and then face the grand jury for program end testing and certification during the post internship period.

As the AICTE is making this training and the certification mandatory for the grant of degree, learners would, through this regulation, gain immensely. During this period of on-site/on-job posting, the intern, while contributing to the work at site is also expected to achieve proficiency in his stream. This internship helps the student in gaining the essential skills that would be useful in creating a successful career as the learner gets exposed to real life situations and their proper solutions. This enables him or her to learn the basic skills needed in future professional life. Additionally, during the internship, the student is expected to abide by the rules and regulations of the site of posting and strictly adhere and follow instructions of the designated site officer leading to the understanding about HSE (Health, Safety & Environment) in a better way.

The organization gains through the availability of a trained engineer who throughout the internship makes a positive contribution at site as he is tuned to the organization's needs and environment. The organization also gains this valuable resource at a minimal sourcing and administrative cost and if found suitable, the candidate turns out into an asset as a future employee.

Internship Stakeholders:

Current Internship is being conducted through the efforts of sponsoring organization and Implementing agency. Their details are as follows:

- | | |
|-----------------------------|---------------------------|
| 1. SPONSORING ORGANIZATION: | DCI India Private Limited |
| 2. IMPLEMENTING AGENCY: | INDSTT |

1). **DCI (Sponsoring Organization)**

“DCI India” is the industry leading wholesaler firm delivering competitive quality products since its establishment in the year 1991. DCI India commitment to garner diverse customer needs equips us to

bring forth a wide assortment of products DigiTrak Falcon F5, DigiTrak Falcon F1, DigiTrak Aurora, DigiTrak F5, DigiTrak F2, etc. Strong domain expertise and a series of continual improvements resulted in a qualitative product portfolio featuring beneficial characteristics of ergonomic design, robust construction, close manufacturing tolerances, ease of installation, humidity resistance and reliable operation in extreme conditions. DCI India quality controllers check the quality of the offered range from the first phase of selecting the material from the vendors till the last establishment with a specific end goal to affirm their ideal quality. Moreover, each completed range is altogether tested on specific parameters to guarantee its perfection. With efficiency in understanding the exact needs of the clients, DCI India has become the preferred choice in the domestic market.

2). **INDSTT (Implementing Agency)**

Indian Society For Trenchless Technology (INDSTT), autonomous apex organisation to promote the application of Trenchless Technology in India. It was established in 1995 and registered under SR Act of 1860 with registration number 32943 of 1998. Founders of this Society include various luminaries from the Construction Sector having its office at 908, Hemkunt Chambers, 89, Nehru Place, New Delhi – 110019. IndSTT is part of the Engineering Council of India & the trainings provided by IndSTT are recognized by All India Council of Technical Educational as one of the mandatory practical trainings for the grant of technical degrees.

Benefits of Sponsoring Organization:

Sponsored organization (DCI) providing the grants can benefit in many ways as under:

- Cultivation of tailor – made candidates with product specific knowledge.
- Convenience of developing candidates suiting specific job requirements through special commissioned projects & additional training packages in line with requirements for future needs.
- Fulfillment of Corporate Social Responsibility (CSR) needs of organisation.
- Possibility of developing in –house candidates under the scheme for development with service customers.
- Quality enhancement to help in brand recognition & business growth.

Training Structure:

Structure of the training programs is attached as attachment -2

- i) Basics of Mathematics & Measurement

- ii) Project Basics
- iii) HDD Basics
- iv) Locating Basics
- v) Locating
- vi) Interference Avoidance Basics
- vii) Basic Bore Path Planning & Execution
- viii) Data Recording and Reporting

WALKOVER TRACKER TRAINING PROGRAM			
Date	Start time	End time	Course Description
03/07/2017	9:30	10:30	Orientation - Registration, issue of PPE
	10:30	10:45	Opening session
	10:45	11:00	Tea break
	11:00	1:00	Units of measurement & conversion
	1:00	2:30	Lunch
	2:30	5:00	Basic Mathematics
04/07/2017	10:00	11:15	Pythagoras application
	11:15	11:30	Tea break
	11:30	1:00	Pythagoras application
	1:00	2:30	Lunch
	2:30	5:00	Measurement, Perimeter, Area and Volume
05/07/2017	10:00	11:15	Display of measurement & taking measurement
	11:15	11:30	Tea break
	11:30	1:00	Display of measurement & taking measurement
	1:00	2:30	LUNCH
	2:30	5:00	Map reading
06/07/2017	10:00	11:15	Location plans & terrain profile
	11:15	11:30	Tea break
	11:30	1:00	Location plans & terrain profile
	1:00	2:30	Lunch
	2:30	5:00	Location plans & terrain profile
07/07/2017			Review of all Topics
08/07/2017			Site Visit
09/07/2017			Sunday
10/07/2017	10:00	11:15	Basics of soil classifications and characteristics
	11:15	11:30	Tea break
	11:30	1:00	Basics of soil classifications and characteristics
	1:00	2:30	Lunch

	2:30	5:00	Basics of soil classifications and characteristics
11/07/2017	10:00	11:15	Subsurface utility engineering basics
	11:15	11:30	Tea break
	11:30	1:00	Subsurface utility engineering basics
	1:00	2:30	Lunch
	2:30	5:00	Subsurface utility engineering basics
12/07/2017	10:00	11:15	Subsurface utility engineering basics
	11:15	11:30	Tea break
	11:30	1:00	Subsurface utility engineering basics
	1:00	2:30	Lunch
	2:30	5:00	Subsurface utility engineering basics
13/07/2017	10:00	11:15	Construction Methods
	11:15	11:30	Tea break
	11:30	1:00	Construction Methods
	1:00	2:30	Lunch
	2:30	5:00	Line installation plan (Overhead & underground lines) (Electrical, oil gasWater & Sewer)
14/07/2017	10:00	11:15	Safety, Health & Environment basics
	11:15	11:30	Tea break
	11:30	1:00	Safety, Health & Environment basics
	1:00	2:30	Tea break
	2:30	5:00	Safety, Health & Environment basics
15/07/2017			Review of all Topics
16/07/2017			Sunday
17/07/2017	10:00	11:15	HDD Rig Basics
	11:15	11:30	Tea break
	11:30	1:00	HDD Rig Basics
	1:00	2:30	Lunch
	2:30	5:00	Underground Tools
18/07/2017	10:00	11:15	Drilling fluid
	11:15	11:30	Tea break
	11:30	1:00	Drilling fluid
	1:00	2:30	Lunch
	2:30	5:00	Product pipe types & characteristics
19/07/2017	10:00	11:15	Daily progress reporting
	11:15	11:30	Tea break
	11:30	1:00	Daily progress reporting
	1:00	2:30	LUNCH
	2:30	5:00	Daily progress reporting

20/07/2017	10:00	11:15	Receiver, Remote Display, Battery charger Batterye. Transmitter. Roll, Pitch
	11:15	11:30	Tea break
	11:30	1:00	Receiver, Remote Display, Battery charger Batterye. Transmitter. Roll, Pitch
	1:00	2:30	Lunch
	2:30	5:00	Receiver, Remote Display, Battery charger Batterye. Transmitter. Roll, Pitch
21/07/2017			Review of all Topics
22/07/2017			Site Visit
23/07/2017			Sunday
24/07/2017	10:00	11:15	Temperature ,Depth, Predicted Depth ,Battery Status (Locator/Display/Transmitter), Signal strength, Update meter, Channel
	11:15	11:30	Tea break
	11:30	1:00	Temperature ,Depth, Predicted Depth ,Battery Status (Locator/Display/Transmitter), Signal strength, Update meter, Channel
	1:00	2:30	Lunch
	2:30	5:00	Temperature ,Depth, Predicted Depth ,Battery Status (Locator/Display/Transmitter), Signal strength, Update meter, Channel
25/07/2017	10:00	11:15	Locating operation
	11:15	11:30	Tea break
	11:30	1:00	Locating operation
	1:00	2:30	LUNCH
	2:30	5:00	Locating operation
26/07/2017	10:00	11:15	Specifications, least count, system errors
	11:15	11:30	Tea break
	11:30	1:00	Specifications, least count, system errors
	1:00	2:30	LUNCH
	2:30	5:00	Specifications, least count, system errors
27/07/2017	10:00	11:15	Locate Points/ Locate Line / Depth / Predicted Depth
	11:15	11:30	Tea break
	11:30	1:00	Type & source of interference and its impact
	1:00	2:30	LUNCH
	2:30	5:00	Possible solutions to deal with interference
28/07/2017			Review of all Topics
29/07/2017			Site Visit
30/07/2017			Sunday
31/07/2017	10:00	11:15	Locator/ Display settings

	11:15	11:30	Tea break
	11:30	1:00	Locator/ Display settings
	1:00	2:30	Lunch
	2:30	5:00	Signal Calibration
01/08/2017	10:00	11:15	Frequency bands & Modulation
	11:15	11:30	Tea break
	11:30	1:00	Band Selection & Pairing
	1:00	2:30	Lunch
	2:30	5:00	Troubleshooting
02/08/2017	10:00	11:15	Off-Track Locating
	11:15	11:30	Tea break
	11:30	1:00	Off-Track Locating
	1:00	2:30	Lunch
	2:30	5:00	Changing frequency downhole
03/08/2017	10:00	11:15	Entry & Exit angles
	11:15	11:30	Tea break
	11:30	1:00	Machine Setup, alignment& its location
	1:00	2:30	Lunch
	2:30	5:00	Machine Setup, alignment& its location
04/08/2017			Review of all Topics
05/08/2017			Site Visit
06/08/2017			Sunday
07/08/2017	10:00	11:15	Bend Radius
	11:15	11:30	TEA-BREAK
	11:30	1:00	Basic Bore Plan
	1:00	2:30	LUNCH
	2:30	5:00	Basic bore plan
08/08/2017	10:00	11:15	Intermediate track correction
	11:15	11:30	TEA-BREAK
	11:30	1:00	Intermediate track correction
	1:00	2:30	LUNCH
	2:30	5:00	Intermediate track correction
09/08/2017	10:00	11:15	First rod length
	11:15	11:30	TEA-BREAK
	11:30	1:00	First rod length
	1:00	2:30	LUNCH
	2:30	5:00	Last rod length
10/08/2017	10:00	11:15	Data recording
	11:15	11:30	TEA-BREAK

	11:30	1:00	Data recording
	1:00	2:30	LUNCH
	2:30	5:00	Data recording
11/08/2017			Review of all Topics
12/08/2017			Site Visit
13/08/2017			Sunday
14/08/2017			Janmashtami
15/08/2017			Independence Day
16/08/2017			Presentation/Grand Jury
			Valedictory

Other Program Details:

Walkover Tracker Training Program is for the duration of 45 days and the minimum qualification is diploma in the following streams Civil, Electrical, Electronics, Instrumentation & Mechanical engineering students. Admission notice is attached as attachment -3. Program is included in the AICTE-ECI Internship frame work so that the trained individuals gain credit for technical training. Details about AICTE-ECI MoU are available on www.aicte-india.org & www.ecindia.org

Further details about the arrangements between AICTE and ECI can be referred from www.indstt.com/pdf/TW_June_17.pdf where an article is published on this recently signed MoU.



DCI
DIGITAL CONTROL INC.

IndSTT

Admission Notice

Applications are invited for admission in
Walkover Tracker Training Program
Minimum eligibility for the course is
Diploma in Civil, Electrical, Electronics , Instrumentation &
Mechanical Engineering
Batch strength 25 students per batch
Program duration : 45 days.
Location : Faridabad, Haryana, India
Nature: Residential.
Complete fee waiver available for candidates of disadvantaged background
through CSR grants. Seats to be allotted on first-come first served basis.

Interested eligible candidates can contact us

Mr. Anand Kumar
General Manager
Indian Society for Trenchless Technology
908, Hemkunt Chambers, 89, Nehru Place - 110019
Email: indstt@indstt.com, Mobile: +91-9873010226

Admissions Open

Selection Process of the Program:

Mode of selection: The candidates were selected through a two stage of screening process organized by Indian Society for Trenchless Technology (INDSTT)

- a. Written test: Aptitude & mathematical ability test.
- b. Interview: Personals interactions of the qualified candidates were conducted & trainees were selected.

Examination Details:

Written test was conducted on **28th March 2017** in CIDC /INDSTT Training Center, Plot No. 18, Sector 20 A Faridabad, Haryana, in which 128 students appeared. INDSTT developed the merit list of candidates desirous of seeking financial assistance from amongst the enrolled candidates & provided the same to sponsor (DCI) who selected the 25 candidates for the grant. Students' attendance details are attached as attachment-4. Depending on the grant offered, the candidates are provided the assistance in their training.

The image displays seven pages from a technical manual. The pages are filled with dense text and tables. The tables have multiple columns, likely representing different components or parameters of the walkover tracker. Some pages include small diagrams or illustrations of parts of the machine. The text is organized into sections, possibly detailing the assembly, operation, and maintenance of the equipment.



Program Initiation:

The adopted 25 candidates are undertaking the program. Necessary undertakings from the candidates to meet the post training obligations have been taken by INDSTT and copies shall be provided to granting organization. Once the Candidate completes his/her course, he or she shall be deputed in the Industry in consultation with granting organization. Pictures of the inaugural is attached as attachment -5. Photos of ongoing classes & practical works are attached as attachment-6.

