# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

## PROJECT REPORT ON

# "IMPLEMENTATION OF GNSS-SDR AND ITS APPLICATION FOR PPP AT AIET"

**Submitted in partial fulfillment of the requirements for the award of degree**

**BACHELOR OF ENGINEERING**
**IN**
**ELECTRONICS & COMMUNICATION ENGINEERING**

**Submitted By**


| Name | USN |
|---|---|
| A SHREYA | 4AL15EC001 |
| CHARAN RAJ S | 4AL15EC017 |
| DEVIKA H S | 4AL15EC019 |
| HARSHITHA N P | 4AL15EC030 |


**Under the Guidance of**
**Dr. Dattathreya**
**Dean (planning) and Sr. Professor**
Department of E&C Engineering

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**
**ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**
**MOODBIDRI – 574 225.**


**2018-2019**

# ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

**MOODBIDRI – 574 225**

(Affiliated to VTU, **BELAGAVI**)

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

# CERTIFICATE

*Certified that the project work entitled* "**IMPLEMENTATION OF GNSS-SDR AND ITS APPLICATION FOR PPP AT AIET**" *is a bona fide work carried out by*

| | |
|---|---|
| **A Shreya** | **4AL15EC001** |
| **Charan Raj S** | **4AL15EC017** |
| **Devika H S** | **4AL15EC019** |
| **Harshitha N P** | **4AL15EC030** |

in partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2018–2019. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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|---|---|---|
| **Signature of the Guide** | **Signature of the H.O.D** | **Signature of the Principal** |
| **Dr. Dattathreya** | **Dr. D V Manjunatha** | **Dr. Peter Fernandes** |
| | **H. O. D.** | PRINCIPAL |
| | **Dept. Of Electronics & Communication** | Alva's Institute of Engg. & Technology, |
| | **Alva's Institute of Engg. & Technology** | Mijar, MOODBIDRI - 574 225, D.K. |
| | **Mijar, MOODBIDRI - 574 225** | |

**EXTERNAL VIVA**

| Name of the Examiners | Signature with date |
|---|---|
| 1. | 11/6/19 |
| 2. | 11/6/19 |

# ABSTRACT

The software defined radio technology is modern and state-of-art cost efficient technology having enormous advantages from Hardware based receivers. GNSS-SDR works in software mode for digital receiver blocks in real time consisting of baseband digital signal processing, signal acquisition and tracking decoding the navigation message and computing the observables needed by positioning algorithms, which ultimately compute the navigation solution. Real-time Precise Point Positioning requires several analysing and plotting algorithms to evaluate results such as positioning error, ionospheric and tropospheric delays, receiver clock estimation, satellite number, dilution of precisions etc. Project aims to implement a Software Defined Receiver for receiving GNSS data using USRPx310 hardware (available at NARL) and python-based software defined radio.