


RTKLIBの紹介



高須知二

2016-02-01 トラ技2016年2月号オフ会

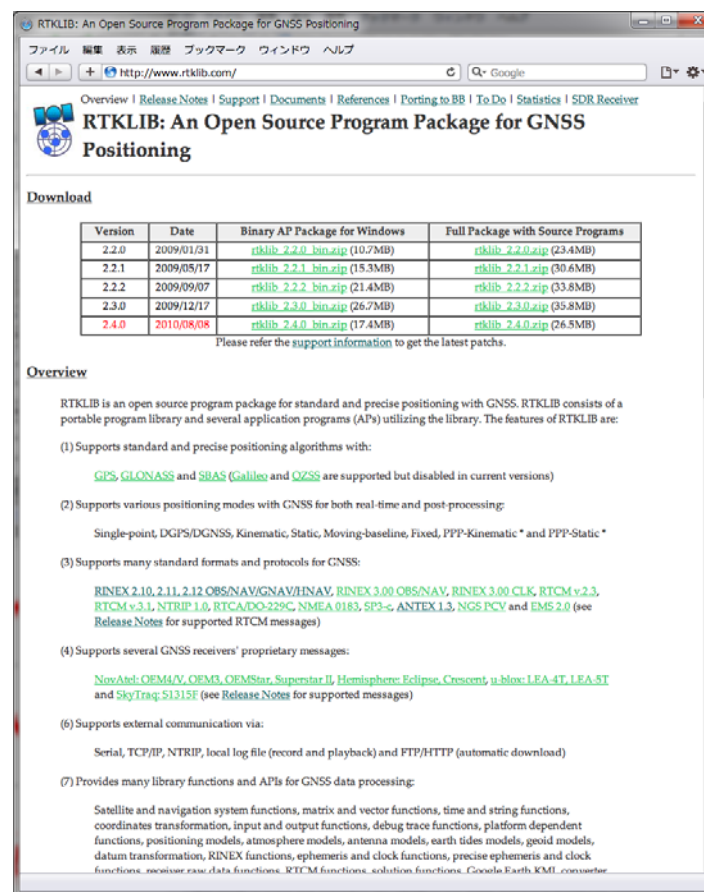
自己紹介

- ソフトウェア・エンジニア
 - 宇宙開発分野: 人工衛星、地上系 等
 - 得意分野: 解析系 ...
 - コードは20年以上書いている ...
- 現在の所属と仕事
 - 東京海洋大学 客員研究員 (9年) 
GPS/GNSS精密測位技術
衛星軌道の精密決定
 - ライトハウステクノロジー・アンド・コンサルティング (3年)
実用準天頂衛星 (QZSS) システム開発



RTKLIB (1)

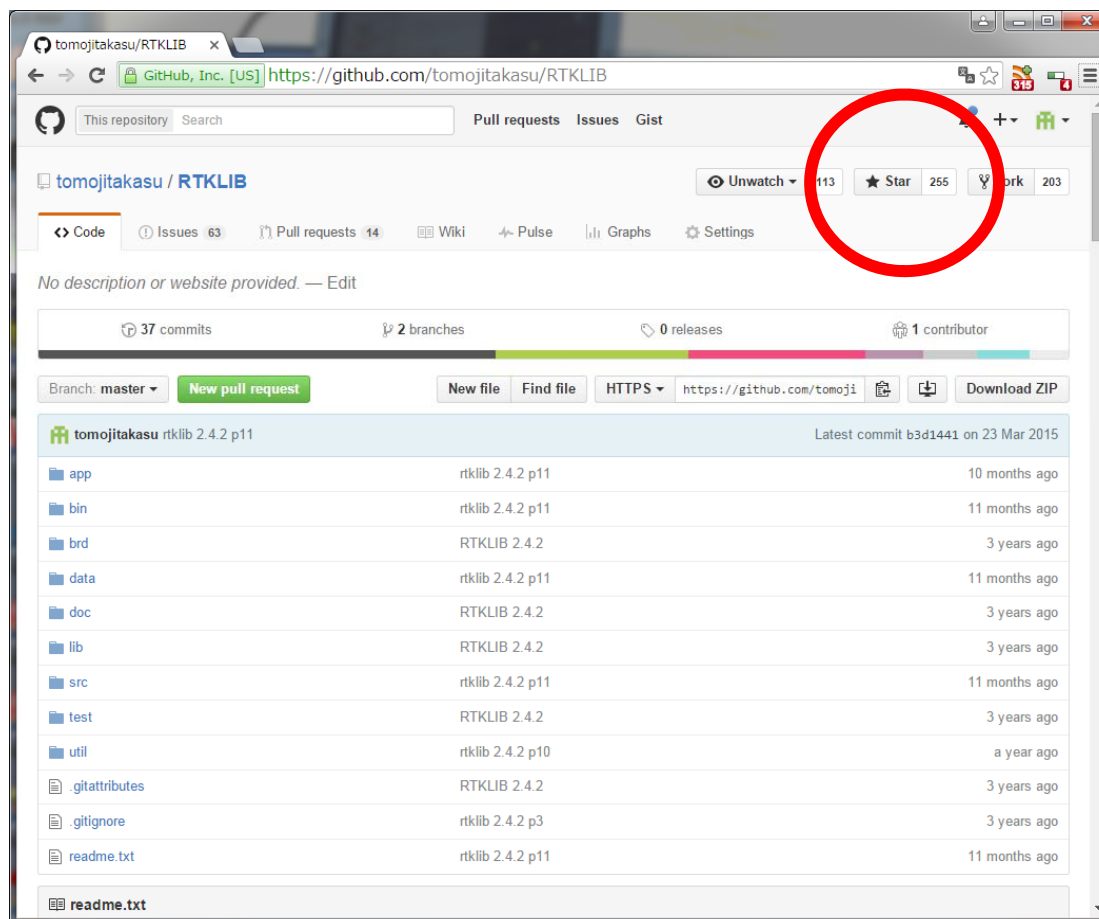
- GPS/GNSS測位解析ツール
 - 開発開始 : 2006年
 - OSS公開 : 2009年
 - 最新ver. : ver. 2.4.2 p11
 - ライセンス : BSD 2-clause
- API + AP
 - オールインワンパッケージ
 - Windows GUI AP + CLI AP



<http://www.rtklib.com>

RTKLIB (2)

- 累計ダウンロード
20万件位。
(7年間)
- Github★255
(2016/1現在)
- この分野では世
界的に有名かも

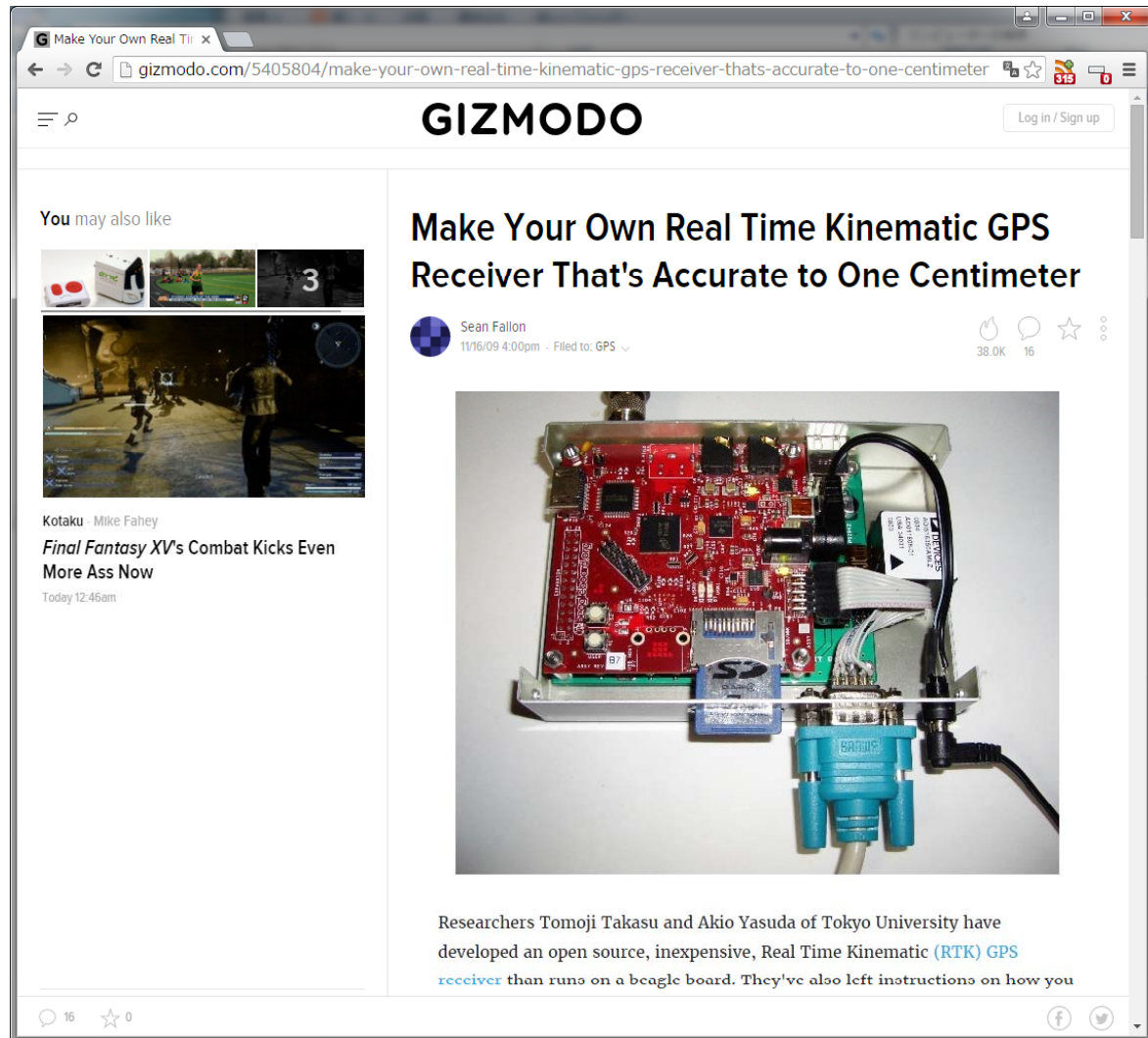


<https://github.com/tomojitakasu/RTKLIB>

RTKLIB応用例 (1)

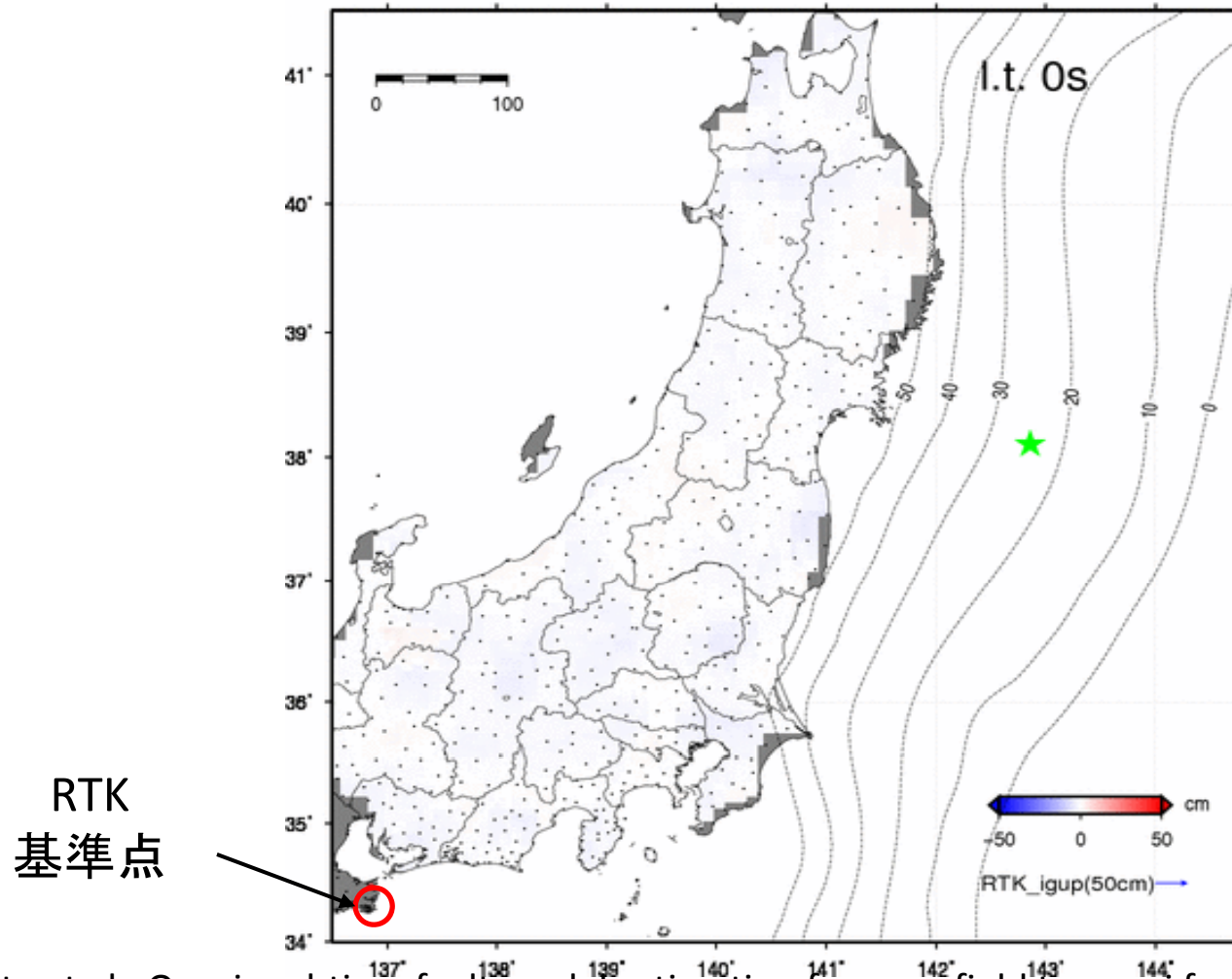
GIZMODO
2009/11/16

(Beagle Board
+ u-blox LEA-4T
+ ADI MEMS-IMU)



The screenshot shows a web browser window displaying a Gizmodo article. The browser's address bar shows the URL: `gizmodo.com/5405804/make-your-own-real-time-kinematic-gps-receiver-thats-accurate-to-one-centimeter`. The article title is "Make Your Own Real Time Kinematic GPS Receiver That's Accurate to One Centimeter" by Sean Fallon, dated 11/16/09 4:00pm. The article features a photograph of a red Beagle Board with various components, including a blue u-blox LEA-4T GPS module and a blue ADI MEMS-IMU sensor, connected to the board. The text below the image states: "Researchers Tomoji Takasu and Akio Yasuda of Tokyo University have developed an open source, inexpensive, Real Time Kinematic (RTK) GPS receiver than runs on a beagle board. They've also left instructions on how you".

RTKLIB応用例 (2)



Y. Ohta et al., Quasi real-time fault model estimation for near-field tsunami forecasting base on RTK-GPS analysis: Application to the 2011 Tohoku-Oki earthquake (Mw 9.0), JGR-solid earth, 2012

RTK (real-time kinematic) 応用



Geodetic Survey



Construction
Machine Control



Precision Agriculture



ITS (Intelligent
Transport System)



Mobile Mapping
System

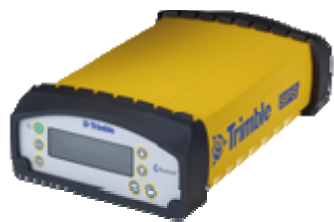


Sports

<http://www.trimble.com>, <http://www.leica-geosystems.com>, <http://www.gpsworld.com>

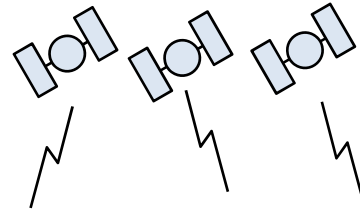
RTK (従来)

Antenna: ~¥400K



Receiver: ~¥2,000K

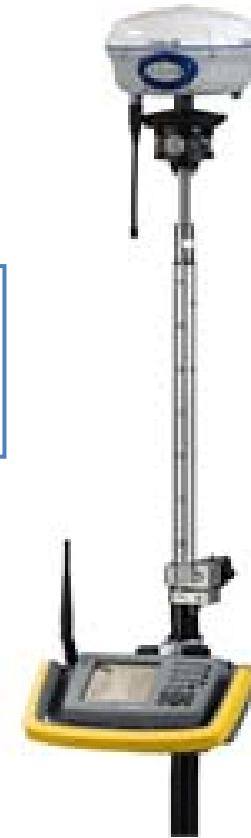
基準局



GPS

全部で
1式¥500万位

Antenna-
Receiver:
~¥2,000K

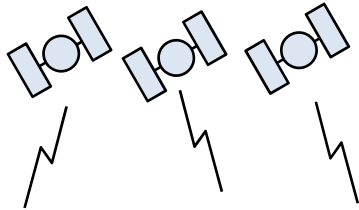


Controller:
~¥500K

移動局

<http://www.trimble.com>

RTK with RTKLIB



GPS, GLONASS,
QZSS, Galileo,
BeiDou

Antenna: \$75.45



Antenna: \$75.45



全部で
1式¥6万位

Receiver:
\$74.99



PC
(流用)

基準局

Windows
Tablet
\$179



Receiver:
\$74.99

移動局

RTK with RTKLIB 例 (1)

RTKNAVI

RTKPLOT

RTKPLOT (GE View)

Receiver:
CSG Shop
u-blox NEO-
M8T card



ONDA
V919 Air CH
9.7"
(2048x1536)
ATOM X5-8300,
RAM 4GB,
Flash 64GB

Com Link to base-station: Y-mobile WiFi Router

RTK with RTKLIB 例 (2)



Receiver:
CSG Shop
u-blox NEO-
M8T card

Tallysman
TW2400

Antenna:

Tallysman
TW4721



RTK with RTKLIB 例 (3)

