



# Vnmrj SWIFT Software for Agilent Varian Systems

## SWIFT code reimplemented in C/C++

Provides most recent, user friendly versions of all SWIFT related pulse sequences integrated with software allowing a fast local and remote image reconstruction. The functionality implemented highly exceeds from what Agilent SWIFT package has from Steady State Imaging (SSI).

The SWIFT software is copyrighted by the Regents of the University of Minnesota and covered by at least the following patents and patent applications: US7279899, US7403006, US7777484, US8067936, US8212560, US8502537, JP5836263, DE112010001536.8, US8798340, US9841480, JP6353865, US8519707, US8933698, US8750642, KR101570623, CN201280042824.4, US10537265, DE112011101171, JP5827989, US9880243, JP5753128, US10698053, US10180475. The license granted by the University is solely for research purposes by non-profit institutions and US government agencies. No additional rights are granted to any patents or copyrights. Users are responsible for ensuring compliance with any applicable patent laws.

For information about licensing this FREE software, please visit [CMRR's SWIFT website](#).

## BENEFITS AND FEATURES:

- Easy to switch between SWIFT versions: original- SWIFT, MB-SWIFT, continuous-SWIFT and spectroscopic-SWIFT (GM-SWIFT on the implementation study);
- ZTE and UTE sequences also implemented for comparison study;
- Variety of magnetization preparations options to create a different contrasts;
- Implemented Look-Locker approaches to collect T1, T1rho, B1 etc. maps in one shot;
- The fitting program integrated with reconstruction creates the maps automatically after the data acquisition; and
- FMRI protocol optimized based on MB-SWIFT.

**Phase of Development** -Software package ready for use on Agilent Varian MRI scanners.

Researchers interested in using this free software for non-commercial research applications can obtain a license using the "order now" button provided on the right panel of this page.

## Researchers

- [Djauat Idiyatullin, PhD](#), Assistant Professor, Radiology
- [Michael Garwood, PhD](#), Professor, Radiology
- Curtis Corum
- [Steen Moeller, PhD](#), Assistant Professor, Radiology
- Ryan Chamberlain
- Michael Tesch
- Steven Suddarth

## Technology ID

2021-315

## Category

Express License  
Life Sciences/Diagnostics & Imaging  
Life Sciences/Health IT  
Software & IT/Health IT

## Learn more



## References

1. Idiyatullin, Djaudat, Curtis A. Corum, and Michael Garwood. ,  
<https://doi.org/10.1016/j.jmr.2014.11.014>, Journal of Magnetic Resonance 251 (2015): 19-25.
2. Idiyatullin, Djaudat, Steven Suddarth, Curtis A. Corum, Gregor Adriany, and Michael Garwood. ,  
<https://doi.org/10.1016/j.jmr.2012.04.016>, Journal of Magnetic Resonance 220 (2012): 26-31.
3. Idiyatullin, Djaudat, Curt Corum, Jang-Yeon Park, and Michael Garwood. ,  
<https://doi.org/10.1016/j.jmr.2006.05.014>, Journal of magnetic resonance 181, no. 2 (2006): 342-349.
4. Idiyatullin D, Corum C, Moeller S, Ellermann J, Garwood M, editors. , Spectroscopic SWIFT,  
<https://cds.ismrm.org/protected/09MProceedings/>
5. Zhang, Jinjin, Djaudat Idiyatullin, Curtis A. Corum, Naoharu Kobayashi, and Michael Garwood. ,  
<https://doi.org/10.1002/mrm.25595>, Magnetic resonance in medicine 75, no. 2 (2016): 537-546.