



Charting Software Discussion

ITAC Meeting

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U.S. Geological Survey

Discussion Topics

- 1. Recent History in WRD**
- 2. Status of S-Plus**
- 3. Status of Other Charting Software**
- 4. Jim Fulton Proposal**
- 5. NWIS Graphics History and Status**
- 6. Options/Discussion**

1. Recent History in WRD

- **Early 90's - Jim Fulton developed G2 on DG, Fulton left USGS in mid-90's**
- **1996 – CPAC pursued commercial replacement for G2 on Sun/NT, Graphics Group formed**
- **1998 – CPAC agreed to combine “easy” stats with charting specs, agreed to support S-Plus as charting and stats software to replace G2**

1. Recent History in WRD (cont.)

- 1999 – DIS announced S-Plus as supported charting and stats software, WRD obtained discipline-wide license
- 2001 – NWIS released graphics patch using S-Plus and tkg2, to replace Disspla (license expired 10/1/01)
- Current - G2 goes away as DG's shut down

2. Status of S-Plus

- **1st WRD Enhancements Released 4/01**
- **Major Release S-Plus 6 Received mid-late 01, simpler to use, improved date/time**
- **After S-Plus 6 Release, Begin 2nd WRD Enhancements, TBD**
- **G2 to S-Plus functionality gap not clear**
- **\$85K Annual Maintenance (01, 02)**

2. Status of S-Plus (cont.)

- **Inhouse Training: USGS Basic Hydrologic Data Analysis Using S-Plus**
- **2 Day Course Developed by S. Ryker, D. Mueller, B. Broshears**
- **Training held in CO, MN, HI, AK, WA/OR, ND**
- **Training scheduled in IA, KS, NE, NM, CA, PA, and AZ (others in the queue)**

2. Status of S-Plus (cont.)

- **Trend Estimation – New ESTREND developed in S-Plus for release in Spring 02**
- **Load Estimation – New LOADEST to be developed in S-Plus**
- **Two programs provide large part of analysis needed by Districts**
- **Functionality not available in G2**

3. Status of Other Charting Software

- **Tkg2, developed and maintained by Will Asquith, TX, partially funded by NWIS, used in NWIS and standalone (available on DIS Solaris apps page)**
- **Harry House, NAWQA DW, using Visual Numerics' JWAVE, PVWAVE development software to develop time series application**
- **No recent formal evaluation of commercial market, but market is fairly mature**

4. Jim Fulton Proposal

- 10/01 – Greg Granato (MA) contacted Jim Fulton about developing new G2, Fulton made informal proposal to rewrite G2 in Python, as a favor to USGS (\$100K wild guess)
- 11/01 – Fulton approached Steve B. with idea to explore rewriting G2 in Squeak, offered free prototypes, strictly as a favor to USGS

4. Jim Fulton Proposal (cont.)

- Squeak is open-source Smalltalk implementation
- Main effort to convert G2 GKS and Motif usage to Squeak's GUI and graphics
- Fulton's wild guess: \$20K
- Must be released as an Open Source Project

5. Recent History of NWIS Graphics

- DISSPLA replaced with S-Plus and TKG2 as interim step for NWIS 4_1
- S-Plus used for QWDATA and seems OK
- TKG2 used for ADAPS and GWSI and needs replaced for performance and functionality
- NWISWeb graphics need replaced for performance and functionality

5. NWIS Graphics Status

- **NWIS looking for better solutions**
 - **Dane Ohe has lead on exploring options**
 - **Not likely to be commercial package**
 - **Been there, tried that**
 - **Packages can't meet needs**
 - **Graphical editing**
 - **Unix and Windows**
 - **Critical applications with special needs with lots of use**
 - **AMS recommendation**

5. NWIS Graphics Status (cont.)

- **Java graphics applications look promising**
 - **build on available open source modules**
 - **Already used in GCLAS and a California District application**
 - **Can meet graphical editing needs of NWIS and NWISWeb**
 - **Can run on Sun servers and under Windows**

6. Options/Discussion

- Accelerate development of S-Plus as charting package, clear up G2 functionality gap
- Further develop and document tkg2
- Pursue Fulton rewrite of G2 in Squeak
- Explore development of new charting package by H. House group using Visual Numerics
- Explore development of new charting package using Java
- Explore new commercial charting software

6. Questions/Options/Discussion

- **Different solutions for different users?**
 - Data section use
 - Studies section use
 - Publications use
- **Off the shelf and/or open source?**
- **Windows, Unix?**
- **Development Tools: Python, Smalltalk, Squeak, Java, PERL/TK, PVWAVE/JWAVE?**