Revised informal one year statement of work reflecting actual award

Applied Information Systems Research Proposal

Title: Viewpoints – hyperwall for the masses
Principal investigator: Creon Levit (NASA Ames Research Center)
Co investigator: Paul Gazis (SETI Institute)

Over the course of one year, we will perform the following tasks:

1. Open source release of beta (prototype) version
    1.1. document existing code
    1.2. write man page
    1.3. gather example data, screen shots and references
    1.4. announce and post on sourceforge
2. Refactor the prototype to create version 1.0
    2.1. add capability for additional visual representations
    2.2. add capability for additional direct manipulations
    2.3. improve and simplify graphical user interface
    2.4. add capability for additional data transformations
3. Functionality improvements (see original proposal for detailed explanations)
    3.1. visualization and manipulation
        3.1.1. linked multiple selections
        3.1.2. higher dimensional scatterplots
        3.1.3. parallel coordiate plots (e.g. for spectra and timeseries)
        3.1.4. boxplots
        3.1.5. automatic (bayesian) histogram binning
        3.1.6. generalized brushes
        3.1.7. improved 3D manipulation (e.g. virtual trackball)
    3.2. data transformations
        3.2.1. outlier detection and removal
        3.2.2. density estimates and density derivative estimates
        3.2.3. summary statistics
        3.2.4. elementary information functionals (entropy, cross-entropy)
    3.3. I/O and interface compatibility
        3.3.1. support additional file formats (at least FITS)
        3.3.2. make viewpoints callable from IDL, R and/or matlab.
        3.3.3. Port to microsoft windows (prototype runs under Linux and Apple OSX)
4. Efficiency improvements (to support even larger data)
    4.1. rendering via openGL vertex buffer objects
    4.2. vectorization and multi-threading
    4.3. profiling and tuning.
5. Applications and publication
    5.1. Analyze SDSS galaxy environment/properties relationships using viewpoints
        5.1.1. Active collaboration with Jeff Scargle and Mike Way.
    5.2. Analyze solar convection and/or solar wind simulation results
    5.3. Apply to one or more aeronautics and/or ESMD data analysis problems
    5.4. publish results of the above
    5.5. open source release of version 1.1, incorporting all of the above

Revised informal budget reflecting actual award

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A.	Direct Labor - Key Personnel	7163
B.	Direct Labor - Other Personnel	0
	Total Number Other Personnel	0
	Total Direct Labor Costs (A+B)	7163
C.	Direct Costs - Equipment	10312
D.	Direct Costs - Travel	441
	Domestic Travel	441
	Foreign Travel	0
E.	Direct Costs - Participant/Trainee Support	0
	Tuition/Fees/Health Insurance	0
	Stipends	0
	Travel	0
	Subsistence	0
	Other	0
	Number of Participants/Trainees	0
F.	Other Direct Costs	50000
	Materials and Supplies	0
	Publication Costs	0
	Consultant Services	0
	ADP/Computer Services	0
	Subawards/Consortium/Contractual Costs	50000
	Equipment or Facility Rental/User Fees	0
	Alterations and Renovations	0
	Other	0
G.	Total Direct Costs (A+B+C+D+E+F)	67916
H.	Indirect Costs	32084
I.	Total Direct and Indirect Costs (G+H)	100000
J.	Fee	0
K.	Total Cost (I+J)	100000