

DART Phase 1 Task Schedule (Priority 1 = essential, 2 = important, 3 = desirable)

**Table 1: Infrastructure and Support**

| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status     |
|--|------|--------|---------|--------------|------------|
| 1A. Establish CVS Repository   | 3/1  | TH     | 2 weeks | 1            | Done 2/26  |
| 1B. Web-based documentation for CVS Repository   | 3/1  | TH     | 1 week  | 2            | Done 2/26  |
| 1C. Coding style specification and example, should include version output, CVS auto-update for documentation, etc.             | 4/2  | TH, JA | 2 weeks | 1            | 4/2        |
| 1D. Establish documentation format, coordinate with code repository  | 4/16 | TH, JA | 1 week  | 2            | Alpha      |
| 1E. Establish requirements for compilation tools for assimilation tools  | 4/9  | TH     | 1 week  | 2            | Done 4/4   |
| 1F. Implement mechanism for compilation of assimilation tools  | 4/16 | TH     | 2 weeks | 2            | Alpha      |
| 1G. Establish user's guide format  | 5/14 | JA, TH | 1 week  | 2            |            |
| 1H. User's guide for CVS repository  |      | TH     | 1 week  | 2            | Done, 3/14 |
| 1J. User's guide overview of DART  | 4/23 | JA     | 1 week  | 2            |            |
| 1K. User's guide to views of DART for different users  | 6/4  | JA     | 2 weeks | 2            |            |
| 1L. Web-based code documentation coordinated with CVS repository (i.e. documentation for what's been checked out and compiled) | 4/23 | TH     | 2 weeks | 2            |            |
| 1M. Future plans document  | 6/11 | JA     | 1 week  | 3            |            |
| 1N. Specifications for external access (web-based)   | 6/11 | TH, JA | 1 week  | 3            |            |
|  |      |        |         |              |            |

**Table 2: Observations**

| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status    |
|--|------|--------|---------|--------------|-----------|
| 2A. Specification for class hierarchy supporting class obs_sequence  | 4/4  | JA     | 1 week  | 1            | Done 4/4  |
| 2B. Specification for observation definition file format   | 4/23 | TH, JA | 1 week  | 1            | Alpha     |
| 2C. Specification for observation space output file format (tightly coupled to 2B)   | 4/23 | TH, JA | 1 week  | 1            | Alpha     |
| 2D. Specification for observation file input (tightly coupled to B and C)  | 4/23 | TH, JA | 1 week  | 1            | Alpha     |
| 2E. Alpha implementation of 2A-D for 1 dimensional (cyclic) domains, tested in L96 model context   | 5/9  | JA, TH | 2 weeks | 1            | Done 4/18 |
| 2F. Specification for observation definition specification tools basic suite   | 5/14 | SA, JA | 2 weeks | 1            |           |
| 2G. Alpha implementation of 2A-D for 2 dimensional spherical domain  | 5/23 | JA, TH | 2 weeks | 2            |           |
| 2H. Alpha implementation of 2F for 1 dimensional cyclic domains  | 5/28 | JA, SA | 2 weeks | 1            |           |
| 2J. Alpha implementation of 2A-D for 3 dimensional spherical domains   | 6/6  | JA, TH | 3 weeks | 1            |           |
| 2K. Specification for extending 2J to support limited domain in 3 dimensions; specific target WRF regional experiments                       | ?    |        | 2 weeks | 3            |           |
| 2L. Demonstrate 2F in L96  | 6/18 | All    | 1 week  | 1            |           |
| 2M. Implement subset of 2F for spherical domain point observations (should work either 2 or 3 dimensional)                                   | 6/18 | JA, SA | 2 weeks | 1            |           |
| 2N. Implement subset of 2F for one or more non-point observations in spherical domain; suggested targets satellite radiance or doppler radar | ?    |        | 2 weeks | 2            |           |

**Table 2: Observations**

| Task Description   | Due  | Who? | Effort  | Prior<br>ity | Status |
|--|------|------|---------|--------------|--------|
| 2O. Specification for simple graphical interface to observation definition specification tools (2F)              | 5/28 | SA   | 1 week  | 1            |        |
| 2P. Specification for coordinating targeting methods with DART   | 7/9  | JA   | 1 week  | 2            |        |
| 2Q. Implement simple subset of 2O  | 6/11 | SA   | 2 weeks | 1            |        |
| 2R. Complete documentation for observation classes   | 6/4  | JA   | 1 week  | 2            |        |
| 2S. Complete documentation for instances of observation class and associated observation set specification tools | 6/18 | All  | 2 weeks | 2            |        |
|  |      |      |         |              |        |
|  |      |      |         |              |        |

DART Phase 1 Task Schedule (Priority 1 = essential, 2 = important, 3 = desirable)

**Table 3: Models**

| Task Description   | Due  | Who?   | Effort | Prior<br>ity | Status   |
|--|------|--------|--------|--------------|----------|
| 3A. Specify base model minimum requirements plus desirable extended interfaces | 4/4  | JA     | 1 week | 1            | Done 4/4 |
| 3B. Specification for assim_model 'wrapper' class                              | 4/4  | JA     | 1 week | 1            | Done 4/4 |
| 3C. Specification for state output files                                       | 4/16 | TH, JA | 1 week | 1            | Alpha    |
| 3D. Specify time management requirements for assim_model_class                 | 4/4  | JA     | 1 week | 1            | Done 4/4 |

**Table 3: Models**

| Task Description  | Due  | Who?   | Effort  | Prior<br>ity | Status    |
|---|------|--------|---------|--------------|-----------|
| 3E. Implement all model classes for L96   | 5/2  | JA     | 2 weeks | 1            | Done 4/18 |
| 3F. Select complete low-order model suite   | 5/7  | JA     | 1 week  | 2            |           |
| 3G. Select global model capable of real data use  | 5/14 | JA, TH | 1 week  | 1            |           |
| 3H. Implement low-order model suite   | 5/14 | JA, TH | 2 weeks | 2            |           |
| 3J. Implement 2 dimensional model on sphere   | ?    |        | 2 weeks | 2            |           |
| 3K. Implement global model  | 6/11 | JA, TH | 4 weeks | 1            |           |
| 3L. Determine requirements for graphical interface to control model parameters for assimilation purposes      | 6/18 | SA     | 1 week  | 1            |           |
| 3M. Document model and assim_model classes  | 6/18 | JA, TH | 1 week  | 2            |           |
| 3N. Documentation for available low order models  | 6/20 | JA     | 1 week  | 2            |           |
| 3O. Documentation for global model  | 6/25 | JA, TH | 2 weeks | 2            |           |
| 3P. Documentation for 2 dimensional model on sphere   | ?    |        | 1 week  | 3            |           |
| 3Q. Determine if WRF DA interfaces are mature enough to include in demo; conditional milestone to include WRF | 6/18 | JA     | 2 weeks | 3            |           |
| 3R. Demonstration of low order 1 dimensional systems for various user views                                   | 6/21 | JA, TH | 1 week  | 1            |           |
| 3S. Demonstration of 3 dimensional model for various user views including limited use of real data            | 7/11 | All    | 3 weeks | 1            |           |
| 3T. Final operational demo  | 7/23 | All    |         | 1            |           |

**Table 4: Assimilation Algorithms**

| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status |
|--|------|--------|---------|--------------|--------|
| 4A. Specification for assimilation space output files  | 5/7  | TH, JA | 1 week  | 1            |        |
| 4B. Implement 4A   | 5/21 | TH, JA | 2 weeks | 1            |        |
| 4C. Implement basic EAKF consistent with observation and model classes                         | 5/23 | JA, TH | 1 week  | 1            | Alpha  |
| 4D. Specification for implementation of 4D variational methods                                 | 6/11 | ???    | 3 weeks | 2            |        |
| 4E. Specification for graphical interfaces to support simple assimilation experiments (see 3L) | 6/18 | SA     | 2 weeks | 1            |        |
| 4F. Implement 4E   | 6/25 | SA, JA | 3 weeks | 1            |        |
| 4G. Additional filter variants implemented   | ?    |        | 1 week  | 2            |        |
| 4H. Documentation for general assimilation classes   | 6/18 | JA     | 1 week  | 2            |        |
| 4J. Documentation for specific filter methods  | 6/25 | JA     | 1 week  | 2            |        |
| 4K. Specification of mechanism for dynamic OSSE's and targeted observation experiments         | 7/9  | JA     | 1 week  | 2            |        |
|  |      |        |         |              |        |
|  |      |        |         |              |        |
|  |      |        |         |              |        |
|  |      |        |         |              |        |

**Table 5: Diagnostic Output**

| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status   |
|--|------|--------|---------|--------------|----------|
| 5A. Specification for basic and extended suite of graphical diagnostic output                    | 4/18 | JA     | 2 weeks | 1            | Underway |
| 5B. Specification of simple graphical interface to basic diagnostics                             | 6/25 | SA, TH | 2 weeks | 1            |          |
| 5C. Implement 5A   | 6/11 | TH, JA | 2 weeks | 1            |          |
| 5D. Implement 5B   | 7/16 | SA     | 3 weeks | 1            |          |
| 5E. Implement extended suite of graphical diagnostics  | ?    | SA     | 2 weeks | 2            |          |
| 5F. Explore mechanisms for web-based access to diagnostics for archived assimilation experiments | 7/16 | All    | 1 week  | 3            |          |
|  |      |        |         |              |          |

**Table 6: Comprehensive**

| Task Description             | Due | Who? | Effort  | Prior<br>ity | Status    |
|------------------------------|-----|------|---------|--------------|-----------|
| 1A. Establish CVS Repository | 3/1 | TH   | 2 weeks | 1            | Done 2/26 |

**Table 6: Comprehensive**

| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status     |
|--|------|--------|---------|--------------|------------|
| 1B. Web-based documentation for CVS Repository   | 3/1  | TH     | 1 week  | 2            | Done 2/26  |
| 1H. User's guide for CVS repository  |      | TH     | 1 week  | 2            | Done, 3/14 |
| 1C. Coding style specification and example, should include version output, CVS auto-update for documentation, etc.             | 4/2  | TH, JA | 2 weeks | 1            | 4/2        |
| 2A. Specification for class hierarchy supporting class obs_sequence  | 4/4  | JA     | 1 week  | 1            | Done, 4/4  |
| 3A. Specify base model minimum requirements plus desirable extended interfaces   | 4/4  | JA     | 1 week  | 1            | Done, 4/4  |
| 3B. Specification for assim_model 'wrapper' class  | 4/4  | JA     | 1 week  | 1            | Done 4/4   |
| 3D. Specify time management requirements for assim_model_class   | 4/4  | JA     | 1 week  | 1            | Done 4/4   |
| 1E. Establish requirements for compilation tools for assimilation tools  | 4/9  | TH     | 1 week  | 2            | Done 4/4   |
| 3C. Specification for state output files   | 4/16 | TH, JA | 1 week  | 1            | Alpha      |
| 1D. Establish documentation format, coordinate with code repository  | 4/16 | TH, JA | 1 week  | 2            | Alpha      |
| 1F. Implement mechanism for compilation of assimilation tools  | 4/16 | TH     | 2 weeks | 2            | Alpha      |
| 5A. Specification for basic and extended suite of graphical diagnostic output  | 4/18 | JA     | 2 weeks | 1            | Underway   |
| 1L. Web-based code documentation coordinated with CVS repository (i.e. documentation for what's been checked out and compiled) | 4/23 | TH     | 2 weeks | 2            |            |
| 1J. User's guide overview of DART  | 4/23 | JA     | 1 week  | 2            |            |
| 2B. Specification for observation definition file format   | 4/23 | TH, JA | 1 week  | 1            | Alpha      |

**Table 6: Comprehensive**

| Task Description  | Due  | Who?   | Effort  | Prior<br>ity | Status    |
|---|------|--------|---------|--------------|-----------|
| 2C. Specification for observation space output file format (tightly coupled to 2B)                  | 4/23 | TH, JA | 1 week  | 1            | Alpha     |
| 2D. Specification for observation file input (tightly coupled to B and C)                           | 4/23 | TH, JA | 1 week  | 1            | Alpha     |
| 3E. Implement all model classes for L96   | 5/2  | JA     | 2 weeks | 1            | Done 4/18 |
| 3F. Select complete low-order model suite   | 5/7  | JA     | 1 week  | 2            |           |
| 4A. Specification for assimilation space output files   | 5/7  | TH, JA | 1 week  | 1            |           |
| 2E. Alpha implementation of 2A-D for 1 dimensional (cyclic) domains, tested in L96 model context    | 5/9  | JA, TH | 2 weeks | 1            | Done 4/18 |
| 1G. Establish user's guide format   | 5/14 | JA, TH | 1 week  | 2            |           |
| 2F. Specification for observation definition specification tools basic suite                        | 5/14 | SA, JA | 2 weeks | 1            |           |
| 3G. Select global model capable of real data use  | 5/14 | JA, TH | 1 week  | 1            |           |
| 3H. Implement low-order model suite   | 5/14 | JA, TH | 2 weeks | 2            |           |
| 4B. Implement 4A  | 5/21 | TH, JA | 2 weeks | 1            |           |
| 4C. Implement basic EAKF consistent with observation and model classes                              | 5/23 | JA, TH | 1 week  | 1            | Alpha     |
| 2G. Alpha implementation of 2A-D for 2 dimensional spherical domain                                 | 5/23 | JA, TH | 2 weeks | 2            |           |
| 2H. Alpha implementation of 2F for 1 dimensional cyclic domains                                     | 5/28 | JA, SA | 2 weeks | 1            |           |
| 2O. Specification for simple graphical interface to observation definition specification tools (2F) | 5/28 | SA     | 1 week  | 1            |           |
| 1K. User's guide to views of DART for different users   | 6/4  | JA     | 2 weeks | 2            |           |



**Table 6: Comprehensive**

| Task Description   | Due               | Who?   | Effort                  | Prior<br>ity      | Status |
|--|-------------------|--------|-------------------------|-------------------|--------|
| 2R. Complete documentation for observation classes   | 6/4               | JA     | 1 week                  | 2                 |        |
| 2J. Alpha implementation of 2A-D for 3 dimensional spherical domains   | 6/6               | JA, TH | 3 weeks                 | 1                 |        |
| <a href="#">2K. Specification for extending 2J to support limited domain in 3 dimensions; specific target WRF regional experiments</a> | <a href="#">?</a> |        | <a href="#">2 weeks</a> | <a href="#">3</a> |        |
| 1M. Future plans document  | 6/11              | JA     | 1 week                  | 3                 |        |
| 1N. Specifications for external access (web-based)   | 6/11              | TH, JA | 1 week                  | 3                 |        |
| 2Q. Implement simple subset of 2O  | 6/11              | SA     | 2 weeks                 | 1                 |        |
| 5C. Implement 5A   | 6/11              | TH, JA | 2 weeks                 | 1                 |        |
| 4D. Specification for implementation of 4D variational methods   | 6/11              | ???    | 3 weeks                 | 2                 |        |
| <a href="#">3J. Implement 2 dimensional model on sphere</a>  | <a href="#">?</a> |        | <a href="#">2 weeks</a> | <a href="#">2</a> |        |
| 3K. Implement global model   | 6/11              | JA, TH | 4 weeks                 | 1                 |        |
| 3L. Determine requirements for graphical interface to control model parameters for assimilation purposes                               | 6/18              | SA     | 1 week                  | 1                 |        |
| 3M. Document model and assim_model classes   | 6/18              | JA, TH | 1 week                  | 2                 |        |
| 2S. Complete documentation for instances of observation class and associated observation set specification tools                       | 6/18              | All    | 2 weeks                 | 2                 |        |
| 2L. Demonstrate 2F in L96  | 6/18              | All    | 1 week                  | 1                 |        |
| 2M. Implement subset of 2F for spherical domain point observations (should work either 2 or 3 dimensional)                             | 6/18              | JA, SA | 2 weeks                 | 1                 |        |

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| Task Description   | Due  | Who?   | Effort  | Prior<br>ity | Status |
|--|------|--------|---------|--------------|--------|
| 4E. Specification for graphical interfaces to support simple assimilation experiments (see 3L)   | 6/18 | SA     | 2 weeks | 1            |        |
| 4H. Documentation for general assimilation classes   | 6/18 | JA     | 1 week  | 2            |        |
| 3Q. Determine if WRF DA interfaces are mature enough to include in demo; conditional milestone to include WRF                                | 6/18 | JA     | 2 weeks | 3            |        |
| 3N. Documentation for available low order models   | 6/20 | JA     | 1 week  | 2            |        |
| 3R. Demonstration of low order 1 dimensional systems for various user views  | 6/21 | JA, TH | 1 week  | 1            |        |
| 3O. Documentation for global model   | 6/25 | JA, TH | 2 weeks | 2            |        |
| 3P. Documentation for 2 dimensional model on sphere  | ?    |        | 1 week  | 3            |        |
| 5B. Specification of simple graphical interface to basic diagnostics   | 6/25 | SA, TH | 2 weeks | 1            |        |
| 4F. Implement 4E   | 6/25 | SA, JA | 3 weeks | 1            |        |
| 4G. Additional filter variants implemented   | ?    |        | 1 week  | 2            |        |
| 4J. Documentation for specific filter methods  | 6/25 | JA     | 1 week  | 2            |        |
| 2N. Implement subset of 2F for one or more non-point observations in spherical domain; suggested targets satellite radiance or doppler radar | ?    |        | 2 weeks | 2            |        |
| 4K. Specification of mechanism for dynamic OSSE's and targeted observation experiments   | 7/9  | JA     | 1 week  | 2            |        |
| 2P. Specification for coordinating targeting methods with DART   | 7/9  | JA     | 1 week  | 2            |        |

**Table 6: Comprehensive**

| Task Description   | Due  | Who? | Effort  | Prior<br>ity | Status |
|--|------|------|---------|--------------|--------|
| 3S. Demonstration of 3 dimensional model for various user views including limited use of real data | 7/11 | All  | 3 weeks | 1            |        |
| 5D. Implement 5B   | 7/16 | SA   | 3 weeks | 1            |        |
| 5E. Implement extended suite of graphical diagnostics  | ?    | SA   | 2 weeks | 2            |        |
| 5F. Explore mechanisms for web-based access to diagnostics for archived assimilation experiments   | 7/16 | All  | 1 week  | 3            |        |
| 3T. Final operational demo   | 7/23 | All  |         | 1            |        |
|  |      |      |         |              |        |
|  |      |      |         |              |        |