1. MEETING MINUTES

The minutes are organized by topic per the agenda.

1.1 INTRODUCTIONS & MEETING GOALS AND OBJECTIVES

Brad Schmidt welcomed everyone to the meeting and gave an overview of the agenda. Participants in the meeting also introduced themselves to the group.

1.2 PRESENTATION ON RECENT CO-FPS DEVELOPMENT AND NEW MODEL PRODUCTS

Bill Petzke of NCAR presented information on recent CO-FPS development activities, including new model products. One of the new development areas is the initial implementation of a capability to provide training to users who are new to the system. New case studies will be added into this training module as time goes on and the system will be available for use later in 2018. Brad encouraged stakeholders to suggest cases of interest.

The engineering and modeling teams have also been working toward resolution of an occasional problem with the ArcGIS- based product publishing. The team has worked with ESRI to come up with a solution, which will involve providing a single service per variable. This issue is expected to be resolved soon. The modeling team has also resolved a problem that resulted in some simulations crashing before they were complete. This issue was associated with the underlying mesoscale modeling system (Weather Research and Forecasting model, WRF) and was resolved with help from the developers of that system.

Enhancements to the system include addition of the ability to save comments related to specific simulations and creation of an administration function. The latter function facilitates the ability to clean out old simulations that are no longer needed.

Finally, the team continues to work toward an implementation of the system in a cloud computing environment, which will make it possible to run more than three simulations simultaneously.

Brad Schmidt provided an overview of the current CO-FPS system available via CO-WIMS, and demonstrated the ignition of a rapid simulation at Carter Lake. Brad noted that the ignition point for the rapid simulations is represented as a 100 m by 100 m box.

The CO-WIMS displays for CO-FPS now default to Mountain Time, but there is a new built-in capability to use different time zones. Users can also include comments about specific simulations that will be stored with the simulation products. Animations now work more intuitively, and allow a user to step through views through time. Temperature and relative humidity values are also now available, displayed at a 100 m scale.

More details are included in the presentation that was given during the meeting (available from the CoE's CO-FPS website).

A few questions were raised regarding the cloud computing capability. First, when an hour is purchased is it based on clock time or CPU time? The response was that we believe that once an hour has started, the whole hour is purchased. A related question concerned whether users will notice any differences when the system is running in the cloud environment rather than on a server; the answer is that there should be no differences – the platform being used should be transparent to the user.

A question was asked regarding whether it is possible to pause a simulation that was initialized by another user. The answer is that it is possible to abort a job but not pause it; competition for simulation time should not be an issue when the system is running in the cloud environment.

A question was asked regarding whether a central system will be established where one individual will initialize fire simulations. Among other things, this would provide stakeholders with more exposure to the system. Brad Schmidt said that it may be possible to use Irwin data to automatically initialize nowcast simulations but implementation of this option needs to be considered further. Several participants indicated that this would be very useful.

A question was raised regarding whether the system can take into account spot fire ignitions. Branko Kosovic responded that the NCAR modeling team will be looking into how to implement such a capability in the next year.

A suggestion was made regarding the use of the system to indicate fire spread for prescribed burns when there are limits to the allowable burn area. It would be nice to be able to "drop" heat at a few places in the prescribed burn region, which could be similar to spot fire ignitions. The spread limitations could be identified by signifying that a large area around the expected perimeter is already burned.

1.3 PRESENTATION AND FOLLOW-UP DISCUSSION ON FUEL MOISTURE SENSITIVITY TESTING IN CO-FPS

Brad Schmidt introduced this discussion with a reminder of the discussion of fuel moisture that took place at the 1 August Stakeholder meeting. Branko Kosovic (NCAR) presented the results of some follow-on work by the NCAR team which focused on evaluating the sensitivity of the simulations to fuel moisture attributes. In particular the CO-FPS system was run with four different levels of fuel moisture to investigate the sensitivity of fire-spread predictions to this factor. The different fuel moisture levels were applied to 11 Colorado fires from 2016; results for two fires were presented during the meeting. The results indicate very strong sensitivity to the level of fuel moisture.

Branko also described a newly-funded project (supported by NASA) to develop a real-time fuel content database that would account for both live and dead fuel moisture and would make use of satellite-based measurements (e.g., from MODIS). Initial testing of the impact of the information will focus on the 11 cases from 2016.

More details on the fuel model implementation are included in the presentation given during the meeting (available from the CoE's CO-FPS website).

A few questions followed Branko's presentation. Specifically, it was asked whether the test simulations reported on in Branko's talk were based on 1-h time-lag categories. The response was that the values used are representative of all categories. It was mentioned that local RAWS observations could also supply fuel moisture information. It was agreed that it would be good to allow users to apply fuel-moisture scenarios in their simulations. Since the results indicate a strong sensitivity to this parameter, it is important to have a way to take this setting into account in interpreting the simulation results.

1.4 Update on upcoming CO-FPS development tasks, verification work, and training plan

Brad Schmidt and Barbara Brown gave an update on upcoming CO-FPS development tasks, verification work, and the training plan. Development tasks were covered mostly in the first presentation so were only considered briefly. Verification work is being undertaken very intensively, making use of additional MMA perimeters for evaluation of the simulations. The first assessment report for this year will be delivered no later than the end of December 2017. One challenge associated with the verification process is determining how to incorporate information about suppression; this is an area that will be considered in this assessment. Training efforts will occur in the spring.

Appendix A – Meeting Agenda

COLORADO
Center of Excellence for Advanced Technology Aerial Firefighting
Department of Public Safety

Colorado Fire Prediction System August Meeting Agenda
November 13, 2017: 1 p.m. - 3 p.m.

Colorado Department of Public Safety Headquarters
710 Kipling St Lakewood, CO

1:00 p.m. - 1:15 p.m.	Introductions and meeting goals and objectives
1:15 p.m. - 1:50 p.m.	Presentation on recent CO-FPS development and new model products
1:50 p.m. - 2:00 p.m.	Break
2:00 p.m. - 2:30 p.m.	Presentation and follow-up discussion on fuel moisture sensitivity testing in CO-FPS
2:30 p.m. - 3:00 p.m.	Update on upcoming CO-FPS development tasks, verification work, and training plan