1 Original AFMS requirements

1.1 Requirements common to C2, FO, AFCS

1.1.1 Preparation of Drop Plans

CR-1 The AFMS drop plans (DPs) shall include the following information:
   a. Target identification number(s);
   b. Target Description(s);
   c. Target location(s);
   d. Remarks;
   e. Execution Time and duration;
   f. Extinguisher/Retardant/Incendiary type;
   h. Unit Identifier; and
   i. Method of Drop.

CR-2 The AFMS target record shall contain the following minimum information:
   a. Target identification label (six alphanumeric characters);
   b. Target location; and c. Target priority.

CR-3 For each DP the AFMS shall be capable of storing a maximum of not less than 20 target records.

CR-4 The AFMS shall receive and be able to accept target information from:
   a. manual target data entry; and
   b. AFMS Message Format (AMF) message.

1.1.2 Management of Drop Missions

CR-5 A Drop Mission Profile (DMP) contains the target and mission details for a single drop mission as passed on by the C2 or FO. The Drop Mission Profile on the AFCS will also include the calculated Drop Solution for that aircraft.

CR-6 The AFMS shall include a drop mission planning tool for an authorised user to create, store, modify and delete DMP.

CR-7 The AFMS shall require the user to confirm or cancel the entry or modification of drop mission data before it is accepted by the system.

CR-8 The display of tactical situational awareness on a digital map of the AFMS shall include the following functions:
   a. disposition of aircraft;
   b. way points;
   c. deployment and change of position orders;
   d. drag and drop functionality;
   e. obstacles;
   f. fire warnings;
   h. Chemical/Biological/Nuclear/voice linklogical (CBNR) events;
i. - deleted
j. supply points;
k. drop support coordination measures;
l. unit zones of drop;
m. FO or sensor zones of observation; and
n. - deleted
o. drop unit status (i.e. moving, available, dropping, offline for replenishment/maintenance etc.).

1.1.3 Communications

CR-9 The AFMS shall be able to carry out the following automatic tasks:
a. create an AMF message; and
b. read/parse an AMF message.

CR-10 The AFMS shall provide the user with the facility to manually edit AMF messages.

CR-11 The AFMS shall be able to internally transmit and receive messages between any AFMS nodes via a voice link.

CR-12 The AFMS shall be able to internally transmit and receive messages between any AFMS nodes via a data link.

1.2 Requirements on the Command and Control (C2) side:

1.2.1 Preparation of Drop plans

CC-13 The C2 should provide the capability for authorised users to create, store, modify and delete Drop plans (DPs).

CC-14 The C2 shall allow an authorised user to create, store, modify and delete Drop plans (DPs).

CC-15 The C2 shall be able to store a maximum of no less than 20 DPs.

CC-16 The C2 shall be able to retrieve, for modification or execution, a stored DP in no more than a maximum of 10 seconds.

CC-17 The C2 shall allow an authorised user to enter an alphanumeric text label for each stored DP.

CC-18 The C2 shall allow an authorised user to create, store, modify and delete target records.

CC-19 The C2 shall allow the user to store a maximum of not less than 100 target records.
1.2.2 Management of Drop Missions

CC-20 The C2 shall be able to store a maximum of no less than 100 DMPs.

CC-21 The drop mission planning tool of the C2 shall contain the following functions:
   a. define/retrieve target to be engaged;
   b. define time schedule;
   c. define target engagement (execution time);
   d. aircraft/brigade allocation for the selected target engagement;
   e. define volume/duration for drop command calculation;
   f. time schedule overview (all involved aircraft/brigades); and
   g. presentation of tactical situational awareness on a digital map.

CC-22 The C2 shall be able to transmit DMP to aircraft via voice link and data link.

CC-23 The C2 shall be able to transmit DMP to FO locations via voice link and data link.

1.3 Requirements on the FO side:

1.3.1 Preparation of Drop plans

FO-24 The FO should provide the capability for authorised users to create, store, modify and delete Drop plans (DPs).

FO-25 The FO shall allow an authorised user to create, store, modify and delete Drop plans (DPs).

FO-26 The FO shall be able to store a maximum of no less than 20 DPs.

FO-27 The FO shall be able to retrieve, for modification or execution, a stored DP in no more than a maximum of 10 seconds.

FO-28 The FO shall allow an authorised user to enter an alphanumeric text label for each stored DP.

FO-29 The FO shall allow an authorised user to create, store, modify and delete target records.

FO-30 The FO shall allow the user to store a maximum of not less than 100 target records.
1.3.2 Management of Drop Missions

**FO-31** The drop mission planning tool of the FO shall contain the following functions:

- a. define/retrieve target to be engaged;
- b. define time schedule;
- c. define target engagement (execution time));
- d. aircraft/brigade allocation for the selected target engagement;
- e. define volume/duration for drop command calculation;
- f. time schedule overview (all involved aircraft/brigades); and
- g. presentation of tactical situational awareness on a digital map.

**FO-32** The FO shall be able to transmit DMP to aircraft via voice link and data link.

**FO-33** The FO shall be able to automatically receive, via voice link and data link, and store DMP from the C2.

**FO-34** The FO shall allow the Operator to select any of the stored DMP for modification or execution.

**FO-35** The FO shall allow the Operator to manually enter and modify the DMP parameters.

1.4 Requirements for AFCS

1.4.1 Preparation of Drop plans

**AFCS-36** The AFCS shall have no ability to create or modify DPs.

**AFCS-37** The AFCS shall allow an authorised user to store and delete DPs.

**AFCS-38** The AFCS shall allow an authorised user to store and delete target records.

1.4.2 Management of Drop Missions

**AFCS-39** The AFCS shall be able to automatically receive, via voice link and data link, and store DMP from the C2.

**AFCS-40** The AFCS shall allow the Operator to select any of the stored DMP for modification or execution.

**AFCS-41** The AFCS shall allow the Operator to manually enter and modify the DMP parameters.
AFCS-42 The DMP on the AFCS shall include the following data prior to a Drop Solution being calculated:
   a. Target identification label (alphanumeric label);
   b. Target location in grid co-ordinates;
   c. Drop height (high/low);
   d. Met data;
   e. Retardant/Incendiary type;
   f. Distribution of drop; and
   g. Crests (optional).

AFCS-43 The AFCS shall be capable of utilising Met data in each of the following formats:
   a. Default/Drop Table met;
   b. Computer met; and
   c. Registration Met.

AFCS-44 The AFCS shall allow the Operator to manually enter and edit default Met data corrections (local ground temperature, altitude).

AFCS-45 The AFCS shall be able to:
   a. automatically receive and store METAR Met data from both voice link and data link; and
   b. allow the Operator to manually enter and edit METAR Met data.

AFCS-46 The AFCS shall be able to create or update a meteorological profile from meteorological data stored within the AFMS.

AFCS-47 The AFCS shall be able to automatically receive and store WMO Met data from both voice link and data link in order to create a meteorological profile.

AFCS-48 The AFCS shall allow the Operator to manually enter and edit the extinguisher/retardant/incendiary temperature.

AFCS-49 The AFCS shall provide the Operator with the facility to manually enter and modify the following operational default data:
   a. Aircraft/extinguisher/retardant/incendiary type combination;
   b. Distribution of drop;
   c. Crest clearances;
   d. Restricted drop area radius; and
   e. FDA geometry.

AFCS-50 The AFCS shall automatically populate data entry screens and calculations with the operational default settings unless those settings are overridden by the Operator.

AFCS-51 The AFCS shall be able to automatically carry out the following sequence:
   a. receive a call for drop/drop mission from the voice link or data link;
   b. calculate the drop solution;
   c. prepare drop (for those variants with automated drop mechanisms only); and
   d. display the drop solution to the user for confirmation and execution.
1.5 Requirements for Navigation System

NS-52 The AFMS navigation system is the integrated orientation/location-fixing system that provides timely and accurate positional data to the AFCS. The orientation/location system will include all equipment and components necessary for this task (e.g. global positioning system (GPS) receiver, inertial navigation system (INS) equipment, etc.).

NS-53 The AFMS navigation system shall be an integrated orientation and location fixing system that is integrated with the AFCS equipment on every AFMS aircraft.

NS-54 The AFMS navigation system shall be able to reset its current position from an internal GPS receiver.

NS-55 The AFMS navigation system shall be able to operate without access to GPS data.

NS-56 The GPS receiver within the AFMS navigation system shall be able to provide the following data via its interface:
   a. current position;
   b. Dilution of Precision (DOP);
   c. altitude;
   d. velocity;
   e. time;
   f. orientation;
   g. satellite availability;
   h. waypoints; and
   i. track history.

NS-57 In normal operation, the AFCS shall automatically read location and navigation data from the AFMS navigation system.

NS-58 In the event of a failure of the AFMS navigation system the Operator shall be able to manually enter location data into the AFCS.