NATIONAL WEATHER SERVICE INSTRUCTION 10-1702
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Operations and Services
Dissemination Services NWSPD 10-17

UNIVERSAL GEOGRAPHIC CODE (UGC)

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signed 10/1/02
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Universal Geographic Code (UGC)

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1. Introduction. The World Meteorological Organization (WMO) abbreviated heading and Advanced Weather Information Processing System (AWIPS) Identifier (AI) together are called the National Weather Service Communications Identifier (CI) (see NWSI 10-1701, Text Product Formats and Codes). The CI in many cases does not provide sufficient geographic identification of the affected area and does not provide the product "purge time" (see section 2.2). The Universal Geographic Code (UGC) is used in many text products to provide that additional geographical and temporal information. This allows users easy automated processing and redistribution of the information to site-specific locales.

More specifically, the only purposes of the UGC are to specify (1) the affected geographic area of the event, typically by state, county (or parish), or unique NWS zone (land and marine); and (2) the aforementioned product purge time. The only exception to (1) above is to define the weather synopsis part of certain marine products (see NWSI 10-302).

Complete examples of the UGC and the other formatting rules, including use of the double dollar sign ($$) and the double ampersand sign (&&), are in section 5.

Note: In the header blocks for these examples, individual spaces are denoted by an "underscore" (i.e., '_').

For information on the format of the UGC for specific products, see the appropriate Products Specification documents. These and the NWSIs mentioned in this instruction can be found on the Internet at: http://www.nws.noaa.gov/directives.

1.1 Mission Connection. The NWS mission to protect life and property is carried out by timely delivery, through a variety of dissemination systems, of warnings, watches, forecasts, and other relevant weather, flood, climate, and critical non-weather-related information under the "all hazards" concept (see definition in NWSPD 10-17, Dissemination Services). Correct use of product formats and codes is essential to ensure this delivery and allow users to select, manipulate, and redistribute the information regardless of the dissemination method.

2. Definitions. To use NWS information and codes, such as the UGC and Valid Time Event Code (VTEC) (see NWSI 10-1703), effectively, it is important to understand the following definitions.

2.1 Event vs. Product.

a. **Event**: A specific combination of phenomena, e.g., type of weather or flood, and significance level of alert, e.g., Watch/Warning/Advisory (W/W/A). Common examples of events include Winter Storm Watch, Wind Advisory, Flood Warning. See NWSI 10-1703 for a list of phenomena and significance levels.

b. **Product**: The entire message issued to the public that may include information on one or more events.

2.2 Product Purge Time vs. Event Expiration Time.

a. **Product Purge Time**: Found at the end of the UGC string for an event, it is the time the product or product segment should no longer be used. In long-duration W/W/A products, when the event(s) is ongoing, the product purge time is the time when customers can expect to receive an updated product.

b. **Event Expiration Time**: It is the time when the event is no longer valid. This time will be found within the narrative part of the product and, in coded format, in the VTEC string for certain products. See NWSI 10-1703 and individual NWS Products Specifications for further details.

3. UGC Elements. Each complete UGC group consists of at least the following:

a. Six alphanumeric characters (SSFNNN) followed by a dash (-). The three-letter prefix (SSF) represents the state (or the marine area). The three-number suffix (NNN) represents the affected counties or zones; and

b. Six numeric characters (DDHHMM), followed by a dash, representing the product purge time (in Coordinated Universal Time [UTC]).

Each complete UGC group, or NNN subgroup when it stands alone, and the date/time must be followed by a dash (-).

The following generic form of the UGC shows the differing groups (but not all may be in any one grouping):

SSFNNN-NNN>NNN-SSFNNN-DDHHMM-
in which:

SS	=	two-letter standard Post Office state (or marine area) identifier.
F	=	UGC format, either: = 'C' means the NNN following represents a county or independent city; or = 'Z' means the NNN following represents a unique NWS zone.
NNN	=	after 'C', the FIPS* county or independent city number; or = after 'Z', the NWS zone number, or the characters "ALL" representing ONLY all of the zones in a state, or the numbers "000" used by certain National Centers (NC) representing all, or an unspecified part, of a state.
DDHHMM	=	the product purge date (DD), hour (HH), and minute (MM) in UTC. When the HHMM is midnight UTC for the new DD just beginning, the field should be DD0000, not DD2400.
-	=	code separator/end of code.
>	=	can be used as an indicator of consecutive sequence of NNNs. Only used with zone NNNs.

* Note: FIPS = Federal Information Processing Standard managed by the U.S. Census Bureau.

4. UGC Rules. Following are rules for using the UGC.

   a. Use either the county (C) form or the zone (Z) form of the UGC, but NOT both, in any product. Refer to the appropriate Products Specification document for specific guidance.

      (The majority of the products use the county (C) form of the UGC. A few products using the zone (Z) form of the UGC include public zone forecasts, marine zone forecasts, non-precipitation watch/warning/advisories, winter storm watch/warning/advisories, and short term forecasts.)

   b. The FIPS is a list of county and politically independent city numbers. Each county/independent city has a unique FIPS number, typically using only odd numbers (001, 003, 005, etc.), with the even numbers reserved for future use. This numbering sequence is repeated for each state. The FIPS list is on the NWS Internet site at: http://www.nws.noaa.gov/geodata/ .

For rules on the use of marine zones, see NWS Instruction 10-302, Marine and Coastal Service Areas of Responsibility.

c. If two or more counties or zones from the same state are included in the UGC grouping, the state SS need not be repeated after the first county grouping, only the particular NNNs. For example: MOC001-005-009-DDHHMM- means Missouri counties 1 (Adair), 5 (Atchison), and 9 (Barry). For handling marine zones, see reference in b. above.

d. When there are two or more county or zone numbers in a UGC grouping, the numbers do not have to be in the preferred numerically increasing order, e.g., for Maryland zones 3, 5, and 7, the UGC could be: MDZ005-003-007-DDHHMM-.

e. If counties or zones for two or more states are included in the UGC, the UGC for each new state will begin with a complete 6-character grouping. For example: PAZ015-WVZ001-DDHHMM- means Pennsylvania zone 15 and West Virginia zone 1.

f. Consecutively numbered zones (but NOT counties) in a state are indicated by an inclusive greater than symbol (>). For example: TXZ001>005-DDHHMM- means Texas zones 1 through 5, inclusive. Do NOT use the > for a range of zone numbers, in which there are gaps in the consecutive string.

Important note: Do not use the > to indicate a string of county FIPS numbers, such as 001-003-005-, etc., because the numbers are not technically consecutive, i.e., the even numbers are missing, in most cases.

g. If ALL zones of an entire state are included in a product's UGC, NWS offices should use the preferred NNN = 001>XXX (where XXX = the highest numbered zone for that state). Optionally, the NNN = ALL may be used. For example, all (102) zones in Tennessee can be represented as either TNZ001>102- or TNZALL-. If ALL counties in a state are included, NWS offices can only use the NNN = ALL option. For example, all counties in Tennessee (FIPS #s from 001 to 189) can be represented only by TNCALL-.

Certain National Center products may use the NNN = 000 to indicate all, or an unspecified part, of a state.

h. If plain language names of the associated UGCs are included (see Products Specification documents for appropriate use), the names will occur immediately after the UGC line(s). Each name will be followed by a dash (-). (When the Valid Time Event Code [VTEC] is used, it occurs immediately after the UGC line[s], with the associated plain language names following the VTEC line[s]. See NWSI 10-1703.)

i. If a UGC grouping requires more than one line, each line must end with a dash (-). In other words, an end of line cannot break into a full SSFNNN group. Only one DDHHMM- will be used and occur at the end of the last UGC line (not at the end of each UGC line). The "SSF" sub-group is not required in the middle of a string or at the beginning of a new line while continuing a string.

j. The product purge date/time DDHHMM in UTC depends on the content and type of product. For example, the purge time for short-duration warnings typically is less than an hour, while for longer-term events, the purge time may extend to 6 hours or longer. Offices should issue an updated product (particularly for long-duration events) before the product purge time.

While the $$ and && are not technically part of the UGC string, they are usually associated with it, so the following definitions and uses are shown here.

k. **The double dollar code ($$) is used to end the content block of all products**, including (1) those products that do not use the UGC, and (2) non-segmented products that do use the UGC. The $$ also is used to end the content of individual segments within a segmented product.

Note - Effective Date: The new rule outlined in section 4.k(1) above, will have a delayed effective date no earlier than February 12, 2003, or 120 days after the approval signature date, whichever is later, to allow for NWS software changes and staff training, and customer notification and implementation.

l. **The double ampersand (&&) optionally may be used (one or more times) to separate differing kinds of information** (e.g., narrative text, tabular data) within the content block of a non-segmented product or within a segment(s) of a segmented product. It occurs before the $$ and therefore does NOT end a product or segment. The && also may be used in products that do not use the UGC. Individual Products Specification documents define its use in specific products.

5. UGC Placement. There are two formats for the placement of the UGC within a product.

Notes:
(1) For all following examples in sections 4.1 and 4.2, the (printable and non-printable) communications header and trailer codes will be represented by ## and **, respectively.
(2) Each "underscore" (i.e., '_') is used to indicate one space in the header blocks of all examples.
(3) Example 1 generically identifies each line of the format in parentheses. Only where new information is presented in the other examples are those lines also identified in parentheses.
(4) Some products include the associated plain language names of zones after the UGC line. Some products include broadcast instructions in the Mass News Disseminator (MND header).
(5) For rules and examples of specific products and content, where variations may occur, refer to the appropriate Products Specification documents.

5.1 Format 1 - Non-segmented Product. This format is used for products that apply in their entirety to the geographic areas listed in the UGC. In this format, the UGC is placed on the line immediately after the NWS CI (see section 1) of the communications header block. This applies to the majority of products, including, but not limited to, severe local warnings, watches, advisories, certain statements, summaries, and most state forecast products.

Examples:

a. For an entire state (or states)

Example (1) - includes update information and headline

##	(Communications codes)
FPUS63_KBIS_291624_AAA	(WMO heading - AAA = 1st update)
SFPND	(AWIPS identifier)
NDZ001>054-292130-	(UGC - ND zones 1-54)
	(Blank line)
STATE_FORECAST_FOR_NORTH_DAKOTA...UPDATED	(3-line MND block)
NATIONAL_WEATHER_SERVICE_BISMARCK_ND	
1120_AM_CDT_MON_APR_29_2002	
	(Blank line)
UPDATED_WINDS_TO_30_MPH	("Reason-for-the-update" line)
	(Blank line)
...HEADLINE...	(Optional - in selected products)
	(Blank line)
TEXT	
	(Blank line - optional)
$$	(End of text)
XYZ	(Forecaster ID - optional)
**	(Communications code)

Note for example 1: An ellipsis is not used before and after the "reason-for-the-update" line.

b. For parts of one (or more) state(s)

Example (2) - includes broadcast instruction

##	
WUUS54_KTSA_301156	
SVRTUL	
ARC015-301245-	
BULLETIN_-_EAS_ACTIVATION_REQUESTED	(Broadcast instruction)
SEVERE_THUNDERSTORM_WARNING	
NATIONAL_WEATHER_SERVICE_TULSA_OK	
656_AM_CDT_TUE_APR_30_ 2002	

TEXT

$$
**

Example (3) - multiple states in UGC line, and optional use of &&

##
WGUS43_KFGF_300407
RVAFAR
MNZ001>005-007-013>015-029-NDZ007-008-016-027-030-038-039-049-053-300800-

HYDROLOGIC_SUMMARY
NATIONAL_WEATHER_SERVICE_EASTERN_NORTH_DAKOTA/GRAND FORKS
933_PM_CDT_MON_APR_29_2002

TEXT/DATA
&& (optional separator of differing kinds of content)
TEXT/DATA (text continues)

$$
**

Example (4) - multiple states included in multiple UGC lines

##
AWUS81_KRNK_140726
RWSRNK
NCZ001>006-018>020-VAZ007-009>020-022>024-032>035-043>047-
058-059-WVZ042>045-142030-

REGIONAL_WEATHER_SUMMARY
NATIONAL_WEATHER_SERVICE_BLACKSBURG_VA
322_AM_EDT_TUE_MAY_14_ 2002

TEXT

$$
**

Notes:
(1) In examples 3 and 4, each new state must begin with a full 6-character UGC group and cannot be broken by a line ending.

(2) Example 4 also shows that (a) when there is more than one line of UGC, each line must end with a dash (-), with the date/time group only at the end of the last line, and (b) the "SSF" (in this case "VAZ") is not repeated when a continuation of VA zones wrap around to multiple lines.

5.2 Format 2 - Segmented Product. This format is used for a product where different segments apply to separate geographical areas but are all included within one product, i.e., under one CI. For these segmented products, a unique UGC block, along with any associated plain language names (and any VTEC line[s]), and a repeat of the date/time line from the MND, is placed at the beginning of each segment (after the initial MND header) and a $$ at the end of each segment. Examples of segmented products include, but are not limited to, zone forecasts, partitioned state forecasts, many long-duration statements, and certain summaries and roundups.

Important Notes:
(1) When a product specified as a segmented product (e.g., WSW) is issued for only one segment, the placement of the UGC within the content block is the same as that for any segment in a segmented product, i.e., once defined as a segmented product, always a segmented product. Therefore, the UGC is NOT placed after the CI block.
(2) When one (or more) segment(s) (but not all segments of a segmented product) needs to be resent because of updating/amending or correcting, resend the entire product. See NWS Products Specifications for instructions on specific products.

Example (5) - segmented product includes plain language names of zones and cities and is updated.

```
##
FPUS55_KRIW_291802_CCA
ZFPRIW

WESTERN_AND_CENTRAL_WYOMING_ZONE_FORECASTS...CORRECTED
NATIONAL_WEATHER_SERVICE_RIVERTON _WY
1201_PM_MDT_MON_APR 29_2002

WYZ015-292145-
NATRONA-                                        (Plain language zone/city names)
INCLUDING_THE_CITY_OF...CASPER
1201_PM_MDT_MON_APR_29_2002

CORRECTED_WIND_SPEED_AND_DIRECTION_THIS_AFTERNOON

TEXT

$$

WYZ012-013-292145-
LANDER_FOOTHILLS-WIND_RIVER_BASIN-
```

INCLUDING_THE_CITIES_OF...LANDER...RIVERTON
1201_PM_MDT_MON_APR_29_2002

CORRECTED_AFTERNOON_ HIGH_TEMPERATURES

...HEADLINE...
TEXT

$$
**

Note for example 5: An ellipsis is not used before and after the "reason-for-the-update" line.

Example (6) - segmented product - corrected

##
FPUS66_KSEW_291347_CCA (CCA = 1st corrected version of product)
SFPWA

STATE_FORECAST_FOR_WASHINGTON...CORRECTED
NATIONAL_WEATHER_SERVICE_SEATTLE_WA
645_AM_PDT_MON_APR_29_2002

WAZ001>023-039-040-292300-
STATE_FORECAST_FOR_WESTERN_WASHINGTON...CORRECTED
NATIONAL_WEATHER_SERVICE_SEATTLE_WA
645_AM_PDT_MON_APR_29_2002

CORRECTED_WESTERN_WASHINGTON_FOR_AFTERNOON_HIGH_TEMPERATURES

TEXT

$$

WAZ024>038-041>044-292230-
STATE_FORECAST_FOR_EASTERN_WASHINGTON
NATIONAL_WEATHER_SERVICE_SPOKANE_WA
330_AM_PDT_MON_APR_29_2002

TEXT

$$
**

Note for example 6: An ellipsis is not used before and after the "reason-for-the-corrected" line.

Example (7) - segmented product, includes plain language names of zones and cities and broadcast instruction

##
WWUS41_KCAR_290201
WSWCAR

URGENT_-_WINTER_WEATHER_MESSAGE
NATIONAL_WEATHER_SERVICE_CARIBOU_ME
1000_PM_EDT_SUN_APR_28_2002

...HEADLINE...
.TEXT (SYNOPSIS)

MEZ001-003-004-291600-
NORTHWEST_AROOSTOOK-NORTHERN_SOMERSET-NORTHERN_PISCATAQUIS-
INCLUDING_THE_CITIES_OF...HARDWOOD_MOUNTAIN...MADAWASKA...
FORT KENT...FRENCHVILLE...ALLAGASH...CLAYTON_LAKE...
RIPOGENUS_DAM
1000_PM_EDT_SUN_APR_28_2002

...HEADLINE...
TEXT
$$

MEZ002-005-006-010-291600-
NORTHEAST_AROOSTOOK-NORTHERN_PENOBSCOT-SOUTHEAST_AROOSTOOK-
CENTRAL_ PISCATAQUIS-
INCLUDING_THE_CITIES_OF...CARIBOU...VAN_BUREN...PRESQUE_ISLE...
FORT_FAIRFIELD...GREENVILLE...MOOSEHEAD_LAKE...HAYNESVILLE...
HOULTON...WYTOPITLOCK...MEDWAY...MILLINOCKET...PATTEN
1000_PM_EDT_SUN_APR_28_2002

...HEADLINE...
TEXT
$$
**

Note: A dot occurs before the word “SYNOPSIS” after the HEADLINE, for this particular product. Refer to individual NWS Products Specifications for specific formatting details.