RFM (Request for modification) on the List of UCD-words

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TN - 20060713

What follows is a list of proposed requests (RFM) to modify/add the present standard list of ucd-words: **The UCD1+ controlled vocabulary, Vers. 1.11 - IVOA Recommendation 31 December 2005 (** http://www.ivoa.net/Documents/latest/UCDlist.html).
The RFMs were collected over the past few month, from suggestions coming from various members of the IVOA community**.**
The list has been presented at the UCD-session in Victoria, and corrected taking into account the discussions during the meeting within the WG and with the Theory IG. Other suggestions have been added to describe attributes used by some Data Models.

The list is open for discussion in accordance with the approved standard procedure: **Maintenance of the list of UCD words, Version 1.20 - IVOA Recommendation 28 May 2006 (http://www.ivoa.net/Documents/latest/UCDlistMaintenance.html).**

Due to web security problems, for the moment we discourage the usage of the web-based form for submitting RFMs. On the other hand we can consider the present list of RFMs as a collective effort of the community, not requiring a private personal answer (see par. 2.2 and 2.3 of the maintenance document). For the time being, all the RFMs and all the corresponding answers will be grouped together in the present public document. Other RFMs could be proposed during the discussion phase, so that we can consider this document as a temporary repository of all proposed RFMs.

1. RFM (amendments/clarifications):

A generic request was presented for a richer semantic definition of ucd-words as part of the document itself or, alternatively, to include an explicit, and obvious, reference to a separate "usage" document with examples.
Answer: The original request concerned the description of the ucd-words in the time branch. A complete proposed revision of the time branch can be found in a TN at the end of this document.

2. RFM (deletions/replacements):

Q | phys.atmol suppress without replacing
A.: there is not such a quantity as “phys.atmol”, but the word could be used as a qualifier. The proposal is to replace it with: S | phys.atmol

Q | phys.at.qn.I suppress, replacing with old Q | phys.at.qn
A: ok

Q | phys.at.damping suppress, replacing with new:
Q | phys.damping |Generic damping
A: ok

3. RFM (additions):

S | phys.cosmology | Related to cosmology
A: ok
S | phys.virial | Related to virial quantities (mass, radius, ..)
A: ok

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Note:
“Computational” and “cosmological” words were discussed in Victoria, also with the Theory IG. We need an input from them in order to revise/complete the list below. In particular, one should make a difference between ucd-words (mainly quantities) and Standard Vocabulary words (concepts, objects, processes, labels, anything).

S | comp | Related to computational techniques, methods, etc.
S | comp.simulation | Related to computational simulation
S | comp.resource | Computational resources used in simulation/data processing
S | comp.smooth | Related to smoothing of images or particle densities
S | comp.simulation.nbody | Nbody simulation
S | comp.simulation.sph | Smoothed Particle Hydrodynamics simulation
S | comp.simulation.boxside | Simulation box
S | comp.simulation.gravsoft | gravitational softening
S | comp.simulation.particles | simulation particles - for Nbody and SPH simulations
S | comp.simulation.snapshot | output of a simulation box at a particular instant
S | comp.simulation.grid | simulation grid - for hydro simulations
Q | comp.resource.processors | processors used
Q | comp.resource.memory | total size of a data file
Q | phys.cosmology.omega | matter/energy density of universe
Q | phys.cosmology.Hubble | hubble constant
Q | phys.cosmology.sigma8 | Normalisation of matter power-spectrum
S | phys.matter.dark | dark matter tag
S | phys.matter.baryon | baryonic matter tag
S | phys.darkEnergy | dark energy tag
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S | obs.proposal | Observation proposal
A: ok
Q | obs.proposal.cycle | Proposal cycle
A: ok
P | meta.abstract | Abstract (of paper, proposal,etc.)
A:ok
P | meta.code.status | Status code
A: ok
P | meta.id.PI | Name of Principal Investigator
A: ok
P | meta.id.CoI | Name of Co-Investigator
A: ok
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Examples:
meta.id;obs.proposal name of the proposal
meta.code;obs.proposal proposal code
meta.code.status;obs status of an observation
meta.id.PI;obs PI of the observation
meta.id.CoI;obs.proposal Co-Investigator of the proposal
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Q | meta.email | Curation/contact e-mail
A: ok
Q | meta.ref.uri | URI, universal resource identifier
A: ok
Q | meta.ref.ivorn | IVORN, Int. VO Resource Name (ivo://)
A: ok
S | em.IR.FIR | Far-Infrared
A: ok
S | em.IR.MIR | Medium-Infrared
A:ok
S | em.IR.NIR | Near-Infrared
A:ok
S | em.UV.FUV | Far-UV
A:ok
S | src.net | qualifier indicating that a quantity (e.g. flux) is background subtracted rather than total
A:ok
S | phot.uncalib | photometric uncalibrated measurement
A: I suggest S | stat.uncalib | Qualifier of a generic incalibrated quantity
S | obs.calib.flat | sky/dome flat observations
A:ok
S | src.calib | Calibration source
A:ok
S | src.calib.guideStar | Guide star
A:ok
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Examples:
meta.id;src.calib;phot source used for photometric calibration
meta.id;src.calib;spectr source used for spectroscopic calibration
meta.id;src.calib;pos source used for positional/astrometric calibration
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Q | phys.damping |Generic damping
A.: see above par. 2. RFM

S | phys.particle.* | Elementary particles (electron, proton, neutrino, etc.)
A.: for the moment we only need the electron and neutrino (ok)

To indicate the quantity flux density or flux per unit wl/fr/en/wn... there are three proposals:
(a) use always phot.flux.density; UCDs don't care about units;
(b) add the new words:
phot.flux.perFreq | Flux density (per unit frequency)
phot.flux.perWave | Flux density (per unit wl)
phot.flux.perEnergy | Flux density (per unit energy)

phot.flux.perWavenumber | Flux density (per unit wn)
phot.flux.perDecade (nu*F_nu, lambda*F_lambda)
(c) use a composite UCD without need for new words, .: phot.flux;em.freq
A: one vote against (c); I prefer (a)

weather | new branch to address weather phenomena (at obs. sites)
A.: there is already the word obs.atmos to indicate atmospheric phenomena

Q | spect.line.strength | Spectral line strength S
A:ok
Q | phys.atmol.sWeight.nuclear | Statistical weight for nuclear spin states
A:ok
Q | phys.atmol.symmetry | Type of nuclear spin symmetry
A:ok
Q | stat.probability | Probability
A:ok
Q | phys.entropy | Entropy
A:ok

Q | em.bin | channel / instrumental spectral bin coordinate (bin number)
A:ok
Q | em.binSize | spectral bin size
A:ok
Q | stat.filling | filling factor (volume, time,..)
A:ok

A proposed new UCD1+ time-branch

A more consistent approach to the description of time-related quantities with UCDs.

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The “time” branch in the IVOA Rec v1.11 is the following:

Q	time	Time
Q	time.age	Age
Q	time.crossing	Crossing time
Q	time.epoch	Epoch, julian date
Q	time.equinox	Equinox
Q	time.event	Duration of an event or phenomenon
Q	time.event.end	End time of event or phenomenon
Q	time.event.start	Start time of event or phenomenon
Q	time.expo	Exposure on-time, duration
Q	time.expo.end	End time of exposure
Q	time.expo.start	Start time of exposure
Q	time.interval	Interval of time
Q	time.lifetime	Lifetime
Q	time.obs	Observation on-time, duration
Q	time.obs.end	End time of observation
Q	time.obs.start	Start time of observation
Q	time.period	Period
Q	time.phase	Phase
Q	time.relax	Relaxation time
Q	time.resolution	Time resolution
Q	time.scale	Timescale

Request: introduce a clearer separation between “instant” of time and “duration” in time.

The situation now is:

The words referring to “instants” of time are:

- time.epoch
- time.event.end
- time.event.start
- time.expo.end
- time.expo.start
- time.obs.end
- time.obs.start

The words referring to a “duration” or an interval of time are:

- time.event
- time.expo
- time.obs
- time.interval (but in this case we mean a time-bin, or the time elapsed between two events, not the duration of an event. We need to make the description clearer.)

plus some other rather specific time-words that we leave untouched.

Proposal:

we keep the atoms indicating instants:
epoch,
start,
end
(although a strict hierarchization should give:
epoch, epoch.start, epoch.end !!)

and we introduce a new atom ***duration*** to indicates duration, interval of time during which a generic event/observation/phenomenon is taking place.

We keep the atoms indicating what instants and duration we are referring to:
obs (observation)
expo (exposure)
event (generic event, pleonastic!)
and introduce a new atom
sequence (to indicate a correlated sequence of observations)

One possible combination of atoms is:

time, at level 1
instants/duration at level 2
type of event described at level 3

Examples:

Description	v1.11	***new version***
time/date of observation	time.epoch	***time.epoch.obs***
or:	time.epoch;obs	time.epoch;obs
observing time	time.obs	***time.duration.obs***
or:	time;obs	***time.duration***;obs
exposure time	time.expo	***time.duration.expo***
start time of a sequence	time.obs.start	***time.start.sequence***

In addition, we propose three more atoms to describe creation, publication/release and processing times for data, files, catalogues, etc.

The new proposed “time” branch is illustrated in the following Table. New ucd-words and new descriptions are in ***bold/italic***. Old (v1.11) ucd-words that are not repeated in column “new version” are suppressed.

Table 1. The proposed new “time” branch in UCD1+.

	word in v1.11	***new version***	description
Q	time	time	***Generic quantity in units of time or date***
Q	time.age	time.age	Age
Q		***time.creation***	***Creation time/date (of dataset, file, catalogue,...)***
Q	time.crossing	time.crossing	Crossing time
Q		***time.duration***	***Interval of time describing the duration of a generic event or phenomenon***

Q		***time.duration.event***	***Interval of time describing the duration of an event (pleonastic, see above)***
Q		***time.duration.expo***	***Interval of time describing the duration of an exposure, on-time***
Q		***time.duration.sequence***	***Interval of time describing the duration of a correlated sequence of observations/events***
Q		***time.duration.obs***	***Interval of time describing the duration of an observation***
		time.duration;obs	***(Alternative form)***
Q		***time.end***	***End time/date of generic event***
Q		***time.end.event***	***End time/date of event (pleonastic, see above)***
Q		***time.end.expo***	***End time/date of exposure***
Q		***time.end.sequence***	***End time/date of a correlated sequence of observations/events***
Q		***time.end.obs***	***End time of observation***
		time.end;obs	***(Alternative form)***
Q	time.epoch	time.epoch	***Instant of time related to a generic event (epoch, date, Julian date, time stamp/tag,...)***
Q		***time.epoch.event***	***Instant of time/date related to an event (pleonastic, see above)***
Q		***time.epoch.expo***	***Instant of time/date related to an exposure***
Q		***time.epoch.sequence***	***Instant of time/date related to a sequence of observations/events***
Q		***time.epoch.obs***	***Instant of time/date related to an observation***
		time.epoch;obs	(Alternative form)
Q	time.equinox	time.equinox	Equinox
Q	time.event		Duration of an event or phenomenon
Q	time.event.end		End time of event or phenomenon
Q	time.event.start		Start time of event or phenomenon
Q	time.expo		Exposure on-time, duration
Q	time.expo.end		End time of exposure
Q	time.expo.start		Start time of exposure
Q	time.interval	time.interval	***Time-bin, or the time elapsed between two events, not the duration of an event***
Q	time.lifetime	time.lifetime	Lifetime
Q	time.obs		Observation on-time, duration
Q	time.obs.end		End time of observation
Q	time.obs.start		Start time of observation
Q	time.period	time.period	Period, interval of time between the recurrence of phases in a periodic phenomenon
Q	time.phase	time.phase	Phase, position within a period
Q		***time.processing***	***A time/date associated with the processing of data***
Q	time.relax	time.relax	Relaxation time
Q		***time.release***	***The time/date data is available to the public***
Q	time.resolution	time.resolution	Time resolution
Q	time.scale	time.scale	Timescale
Q		***time.start***	***Start time/date of generic event***
Q		***time.start.event***	***Start time/date of event (pleonastic, see above)***

Q		***time.start.expo***	***Start time/date of exposure***
Q		***time.start.sequence***	***Start time/date of a correlated sequence of observations/events***
Q		***time.start.obs***	***Start time of observation***
		time.start;obs	***(Alternative form)***

In Table 2 we list the suppressed ucd-words, and the new words replacing them.

Table 2. Proposed suppressions / replacements

	suppressed	***replacement***	description
Q	time.event	***time.duration[.event]***	Duration of an event or phenomenon
Q	time.event.end	***time.end[.event]***	End time of event or phenomenon
Q	time.event.start	***time.start[.event]***	Start time of event or phenomenon
Q	time.expo	***time.duration.expo***	Exposure on-time, duration
Q	time.expo.end	***time.end.expo***	End time of exposure
Q	time.expo.start	***time.start.expo***	Start time of exposure
Q	time.obs	***time.duration.obs***	Observation on-time, duration
Q	time.obs.end	***time.end.obs***	End time of observation
Q	time.obs.start	***time.start.obs***	Start time of observation