

## Categorisation of UKCA Modules at UM vn12.0

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The following is a list of all modules in UKCA and GLOMAP\_CLIM directories of the UM repository at vn12.0 with individual modules marked to indicate whether they are expected to be categorised as UKCA, RADAER or UM modules once the refactoring is complete (or whether they themselves require refactoring as a consequence of including code that will be split by the interface). This list is an important reference for any development work proceeding during the transition period. All such work should respect the intended separation of name spaces to avoid conflicting with the aims of the API development work.

Note that the present categorisation does not take into account the potential move of photolysis out of UKCA so photolysis modules are currently categorised as internal modules.

### ***Key to Category Codes***

- I Internal to UKCA
- R Internal to RADAER
- X External (i.e UM-side module)
- IX Processing to be divided between UKCA and UM
- RX Processing to be divided between RADAER and UM
- Expected to become redundant

### ***Files in UKCA directory***

asad_bedriv.F90	I
asad_bimol.F90	I
asad_cdrive.F90	I
asad_chem_flux_diags.F90	I
asad_cinit.F90	I
asad_diffun.F90	I
asad_findreaction.F90	I
asad_flux_dat.F90	I
asad_ftoy.F90	I
asad_fuljac.F90	I
asad_fyfixr.F90	I
asad_fyinit.F90	I
asad_fyself.F90	I
asad_hetero.F90	I
asad_impact.F90	I

asad_inicnt.F90	I
asad_inicnt_col_mod.F90	I
asad_inijac.F90	I
asad_inimpct.F90	I
asad_inix.F90	I
asad_inrats.F90	I
asad_jac.F90	I
asad_mod.F90	I
asad_posthet.F90	I
asad_prls.F90	I
asad_setsteady.F90	I
asad_sparse_vars.F90	I
asad_spimpmjp.F90	I
asad_spmjpdriv.F90	I
asad_steady.F90	I
asad_totnud.F90	I
asad_trimol.F90	I
atmos_ukca_albedo_mod.F90	X
atmos_ukca_mod.F90	X
atmos_ukca_setup_mod.F90	X
emiss_io_mod.F90	X
fastjx_data.F90	I
fastjx_extral.F90	I
fastjx_inphot.F90	IX
fastjx_jratet.F90	I
fastjx_miesct.F90	I
fastjx_opmie.F90	I
fastjx_photoj.F90	I
fastjx_set_aer.F90	I
fastjx_solar2.F90	I
fastjx_specs.F90	IX
fastjx_sphere.F90	I
get_emdiag_stash_mod.F90	X
get_molmass_mod.F90	I
get_nmvoc_mod.F90	I
get_noy_mod.F90	I
init_radukca.F90	X
o3intp_mod.F90	X
param2d_mod.F90	I
photolib/*	I
spcrg3a_mod.F90	R
tstmsk_ukca_mod.F90	X
ukca_abdulrazzak_ghan.F90	I
ukca_activ_mini_snr_mod.F90	X
ukca_activ_mod.F90	I
ukca_activate.F90	I
ukca_add_emiss_mod.F90	I
ukca_aer_no3_mod.F90	I

ukca_aero_ctl.F90	I
ukca_aero_step.F90	I
ukca_aerod.F90	I
ukca_age_air_mod.F90	I
ukca_ageing.F90	I
ukca_all_tracers_copy_mod.F90	X
ukca_api_mod.F90	I
ukca_be_drydep.F90	I
ukca_be_wetdep.F90	I
ukca_binapara_mod.F90	I
ukca_calc_coag_kernel.F90	I
ukca_calc_drydiam.F90	I
ukca_calc_plev_diag_mod.F90	X
ukca_calc_rho_mod.F90	I
ukca_calcminmaxgc.F90	I
ukca_calcminmaxndmdt.F90	I
ukca_calcnucrate.F90	I
ukca_cdnc_jones_mod.F90	I
ukca_cdnc_mod.F90	X
ukca_ch4_stratloss.F90	I
ukca_check_md_nd.F90	I
ukca_check_radaer_coupling_mod.F90	I
ukca_chem1_dat.F90	I
ukca_chem_aer.F90	I
ukca_chem_defs_mod.F90	I
ukca_chem_diags_allts_mod.F90	I
ukca_chem_diags_mod.F90	I
ukca_chem_master.F90	I
ukca_chem_offline.F90	I
ukca_chem_raq.F90	I
ukca_chem_raqaero_mod.F90	I
ukca_chemco.F90	I
ukca_chemco_raq.F90	I
ukca_chemco_raq_init_mod.F90	I
ukca_chemistry_ctl.F90	I
ukca_chemistry_ctl_BE_mod.F90	I
ukca_chemistry_ctl_col_mod.F90	I
ukca_cloudproc.F90	I
ukca_coag_coff_v.F90	I
ukca_coagwithnucl.F90	I
ukca_cond_coff_v.F90	I
ukca_conden.F90	I
ukca_config_defs_mod.F90	I
ukca_config_specification_mod.F90	I
ukca_constants.F90	I
ukca_cspecies.F90	I
ukca_curve_mod.F90	I
ukca_d1_defs.F90	X

ukca_day_of_week_mod.F90	I
ukca_dcoeff_par_av_k.F90	I
ukca_ddcalc.F90	I
ukca_ddepaer_incl_sedi_mod.F90	I
ukca_ddepaer_mod.F90	I
ukca_ddepctl.F90	I
ukca_ddepo3_ocean_mod.F90	I
ukca_ddepvt.F90	I
ukca_deriv.F90	I
ukca_deriv_aero.F90	I
ukca_deriv_raq.F90	I
ukca_deriv_raqaero_mod.F90	I
ukca_dissoc.F90	I
ukca_diurnal_isop_ems.F90	I
ukca_diurnal_oxidant.F90	I
ukca_drydep.F90	I
ukca_drydiam_field_mod.F90	I
ukca_eg_tracers_total_mass_mod.F90	X
ukca_emdiags_struct_mod.F90	I
ukca_emiss_api_mod.F90	I
ukca_emiss_ctl_mod.F90	I
ukca_emiss_diags_mod.F90	I
ukca_emiss_diags_mode_mod.F90	I
ukca_emiss_factors.F90	I
ukca_emiss_mod.F90	I
ukca_emiss_mode_mod.F90	I
ukca_emiss_struct_mod.F90	I
ukca_environment_check_mod.F90	I
ukca_environment_fields_mod.F90	I
ukca_environment_mod.F90	I
ukca_environment_rdim_mod.F90	I
ukca_environment_req_mod.F90	I
ukca_error_mod.F90	I
ukca_extract_dl_data_mod.F90	X
ukca_fastjx.F90	I
ukca_fdiss.F90	I
ukca_fdiss_constant_mod.F90	I
ukca_feedback_mod.F90	X
ukca_fieldname_mod.F90	I
ukca_fixeds.F90	I
ukca_flupj.F90	X
ukca_fracdiss.F90	I
ukca_hetero_mod.F90	I
ukca_impc_scav.F90	I
ukca_inddep.F90	I
ukca_ingridg.F90	I
ukca_iniasad.F90	I
ukca_init.F90	I

ukca_inwdep.F90	I
ukca_light.F90	I
ukca_light_ctl.F90	I
ukca_main1-ukca_main1.F90	I
ukca_mode_check_artefacts_mod.F90	I
ukca_mode_diags_mod.F90	I
ukca_mode_setup.F90	I
ukca_mode_tracer_maps_mod.F90	I
ukca_mode_verbose_mod.F90	I
ukca_nc_emiss_mod.F90	X
ukca_nmspec_mod.F90	X
ukca_ntp_mod.F90	I
ukca_offline_oxidants_diags_mod.F90	I
ukca_option_mod.F90	X
ukca_phot2d.F90	X
ukca_photol.F90	I
ukca_plev_diags_mod.F90	X
ukca_pm_diags_mod.F90	I
ukca_pr_inputs_mod.F90	I
ukca_prim_du_mod.F90	I
ukca_prim_moc.F90	I
ukca_prim_ss.F90	I
ukca_prod_no3_mod.F90	I
ukca_radaer_3D_diags.F90	R
ukca_radaer_band_average.F90	R
ukca_radaer_compute_aod.F90	R
ukca_radaer_get.F90	X
ukca_radaer_get_specinfo.F90	R
ukca_radaer_init-ukcal.F90	X
ukca_radaer_lut_in.F90	RX
ukca_radaer_lut_mod.F90	R
ukca_radaer_populate_lut_mod.F90	R
ukca_radaer_precalc_mod.F90	R
ukca_radaer_prepare.F90	R
ukca_radaer_read_luts.F90	X
ukca_radaer_read_precalc.F90	RX
ukca_radaer_ri_calc_mod.F90	R
ukca_radaer_saved_mod.F90	X
ukca_radaer_set_aerosol_field.F90	RX
ukca_radaer_struct_mod.F90	RX
ukca_radaer_tlut_mod.F90	R
ukca_rainout.F90	I
ukca_raq_diags_mod.F90	I
ukca_read_aerosol.F90	X
ukca_read_offline_oxidants_mod.F90	X
ukca_remode.F90	I
ukca_scavenging_diags_mod.F90	X
ukca_scavenging_mod.F90	X

ukca_scenario_common.F90	I
ukca_scenario_ctl_mod.F90	I
ukca_scenario_prescribed.F90	I
ukca_scenario_rcp_mod.F90	X
ukca_scenario_wmoa1.F90	I
ukca_sediment.F90	I
ukca_set_array_bounds.F90	X
ukca_setdldefs.F90	X
ukca_setup_chem_mod.F90	I
ukca_setup_indices.F90	I
ukca_setup_mod.F90	I
ukca_solang.F90	I
ukca_solflux.F90	I
ukca_solvecoagnucl_v.F90	I
ukca_step_control_mod.F90	I
ukca_step_mod.F90	I
ukca_strat_update.F90	I
ukca_stratf.F90	I
ukca_surfddr.F90	I
ukca_time_mod.F90	I
ukca_top_boundary.F90	I
ukca_trace_gas_mixratio.F90	X
ukca_tracer_stash.F90	X
ukca_tracer_vars.F90	I
ukca_tracers_mod.F90	I
ukca_transform_halogen.F90	I
ukca_trop_hetchem.F90	I
ukca_tropopause.F90	I
ukca_um_interf_mod.F90	X
ukca_um_surf_wet_mod.F90	X
ukca_update_emdiagstruct_mod.F90	I
ukca_vapour.F90	I
ukca_vgrav_av_k.F90	I
ukca_volcanic_so2.F90	IX
ukca_volume_mode.F90	I
ukca_water_content_v.F90	I
ukca_wdepert.F90	I
ukca_wetdep.F90	I
ukca_wetox.F90	I

***Files in GLOMAP\_CLIM directory***

get_gc_aerosol_fields_1d_mod.F90	I
get_gc_aerosol_fields_mod.F90	I
glomap_clim_calc_aird_mod.F90	I
glomap_clim_calc_drydiam_mod.F90	I
glomap_clim_calc_md_mdt_nd_mod.F90	I
glomap_clim_calc_rh_frac_clear_mod.F90	I
glomap_clim_cdnc_mod.F90	IX

glomap_clim_drydp_nd_out_mod.F90	I
glomap_clim_fields_mod.F90	I
glomap_clim_get_netcdffile_rec_mod.F90	X
glomap_clim_identify_fields_mod.F90	X
glomap_clim_netcdf_ancil_mod.F90	X
glomap_clim_netcdf_anclist_mod.F90	X
glomap_clim_netcdf_io_mod.F90	X
glomap_clim_netcdf_parameter_mod.F90	X
glomap_clim_option_mod.F90	X
glomap_clim_pop_md_mdt_nd_mod.F90	I
glomap_clim_radaer_get.F90	IX
prepare_fields_for_radaer_mod.F90	IX
prepare_fields_for_radaer_openmp_mod.F90	I
tstmsk_glomap_clim_mod.F90	X