Tasks	sub tasks	Developers /POC	description	current status	due date	delayed due date, and reason for change	Redmine	documents	web links
NEMSfv3gfs package		Jun Wang	integrate all GFS.v16 updates into NEMSfv3gfs and prepare a package for implementation	most physics upgrade has been included	09/30/2019 done				
POST & product generation									
	Inline POST – NEMSfv3gfs code developmen	Jun Wang, Wen Meng	include UPP in NEMSfv3gfs; writes out grib2 files on Gaussian grid in the horizontal and model native grid in the vertical (?)	inline post is added to model as an option. Any future post related changes need to be added to inline post (update to	10/9/2019, done		Tickets 64518, 70016	Arun.	
	survey downstream users for UPP configuration	EIB	1). alert downstream users GFS.v16 will produce netcdf instead of nemsio files. 2). survey users to determine what fields to add to the inline POST for running downstream models/applications		12/1/2019				
	offline POST	Wen Meng, Hui-ya Chuang	Update UPP for post-processing outputs from the inline POST	will use inline post	10/30/2019, OBE				
	offline POST	Wen Meng, Hui-ya Chuang	Update UPP to ingest netCDF files	Wen is comparing UPP output beween post processing nemsio and netcdf files	12/15/2019		Ticket 64518		
	Station time series Bufr sounding	Guang-Ping Lou	run bufr sounding offline	Working on changes that read in NetCDF data	12/15/2019		Ticket 68938		
	other product update/upgrade/sunset	Hui-ya Chuang, Wen Meng, Yali Mao, and Boi Vuong	There will be major updates to WAFS products to meet next ICAO Milestone. Also continue to sunset legacy products	Yali is working on upgrading WAFS products	12/15/2019		Tickets 67213, 67215 70326	List of products to sunset for GFS V16	
	strom genesis verification	Jiayi Peng	Running NHC strom genesis verification inline in GFS.v16 parallels	wait for the cerification package from Andrew Penny from NHC	12/15/2019			doc	
	hurricane tracker	Jiayi Peng	Update the code for TC track/genesis to prevent memory issue, and to make the package be flexible to any forecast hours.		12/15/2019			doc	
	Wave model POST	Bhavani Balasubramaniyan / Henrique Alves	Review of grib2 encoding according to more recent wave parameter WMO tables. Definition of new grids for AWIPS delivery. Liasing with OPC, NHC, MAG for providing NAWIPS data files on required format/resolution.		12/15/2019		Ticket 68931		
prep & dump									
	update gblevents in obsproc_prep to read model history files in netcdf format	EIB			10/30/2019				
	check all prep &dump steps for dependences on nemsio files, and change to read netcdf history files	Shelley Melchior		Done. Shelley confirmed only prepobs_makeprepbufr.sh calls gblevents to read model output and EIB will take care of update of gblevent	10/30/2019, done				
Verification and Validation									
	METplus into GFSv16 workflow	Mallory Row	Replace VSDB verification with METplus in GFSv16 workflow	Working on decreasing the run time for METplus, currently is running much longer than VSDB	12/15/2019		yes, but due date is 12/31/19		
	Wave Model component V&V	Deanna Spindler / Henrique Alves			12/15/2019				
one-way coupling to the Wave model	**Transition of wave workflow to global-workflow**	Henrique Alves	Transition wave component scripts from GEFS workflow to the global-workflow. Include INIT, PREP, POST (for retrospectives), PGEN and GEMPAK steps (for near-real time and T2O).	GEFS workflow has been completed for retrospectives, scripts are being ported to the global-workflow	12/15/2019		63039		
	Alongside POST (inline)	Roberto Padilla/Henrique Alves	Add capability in WW3 to write individual binary output files at the wave model output time step. Follow up with side-by-side script that convert them to grib2. Eventually crate inline post capability to write directly onto grib2 or netcdf files.	Changes to WW3 code defined. Coding to start next week.	12/15/2019		63041		
	GFS-WW3 coupling: wind on restart files	Jessica Meixner	NEMS coupler tasks, Include winds onto WW3 restart files	Completed. Waiting to for commit to ufs-weather-model to point to this WW3 commit. Will be a part of commit after cpp commit.	12/15/2019				
	Wave-model checkpointing capability	Henrique Alves	Modify WW3 codes to add checkpointing output file capability	Changes to WW3 code started to be planned this week.	12/15/2019		70259		
	Adding WW3 capability to interpolate input grid to curvilinear grid.	Roberto Padilla	Internal components of the WW3 grid mosaic can be curvilinear. The stand-alone code allows reading wind data to curvilinear mosaic components only by external files with wind data provided in the target grid format. Code changes are required to allow internalll interpolation to curvilinear grids.	Completed coding. Now testing using the target GFSv16 grid mosaic conguration with two high-latitude polar stereographic grids.	12/15/2019		63755		
	Deploy operational wave model grids in NEMSfv3gfs - finalize the configuration	Henrique Alves	Adjust NEMSfv3gfs app to run target operational wave model grids	App ported successfully to Hera and Dell. Tests using fv3 c768 and target wave model grid mosaic will resume next week.	11/15/2019		70428		
	Add GEMPAK/PGEN steps	Henrique Alves	For T2O, wave GEMPAK/PGEN steps need to be added to the global-workflow		12/31/2019		70264		
	Deploy new grib2 encoding for updating wave output parameters/Update AWIPS files/headers	Bhavani	grib2 output parameters are outdated relative to recent adjustments to wave product tables published by WMO. Additional validation parameters need also to be included in grib2 files. Higher resolution and parameter-name adjustment will require updates to AWIPS headers.	grib2 tables being reviewed. Taggin up with ECMWF for consistency of definitions across centers.	12/15/2019		68931		
coupling to GLDAS	**GLDAS code development**	Youlong Xia, Helin Wei, Jesse Meng, Rongqian Yang, George Gayno, Fanglin Yang	Coupling GLDAS to GSI to provide land stats forced by observed precipitation	GLDAS has been updated to run with Noah forced by CPC daily 0.125-deg precip product. spin-up run; Tool for converting sfc IC from tiles to Gaussian grid to run GLDAS, and from Gaussian to tiles to update sfc ICs; test and evaluation	11/30/2019			08/22/19 briefing	
	workflow	EIB assigned ~~Dexin Zhang and~~ Hang Lei	update workflow to add GLDAS to the GFS cycling system.	need to develop new JJOB/script/ush scripts, update rocoto and ecflow for cycling; add a step to	10/30/2019				
GFS.v16 workflow		Kate Friedman, Hang Lei and all developers ?	integrate, update and maintain GFS.v16 workflow package; Timing and storage management; EE2 compliance; update ecflow scripts for operation etc	current development branch is feature/gfsv16	5/1/2020			timing test	
DA infrasture development								google doc	
	GSI package integration	Russ Treadon, Cathy Thomas	integrate all DA updates into GSI and prepare a package for implementation		10/30/2019		65376		
	Background errors and low-res runs	Cathy Thomas, Wan-shu Wu	Compute new climatological statistics for 127 layers. Test modification of hybrid weights to relax to static B at upper parts of model.	New static B is exercised in the real-time parallel. There will be no change to the hybrid weights.	10/30/2019		59692, 51179		
	4D IAU	Jeff Whitaker , Russ Treadon	There is currently no initialization being used in GFS v15. 4D incremental analysis update (IAU) will be used for initialization in GFS v16	exercised in real-time parallel	10/30/2019		41787		

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	LETKF	Jeff Whitaker	EnSRF replaced with LETKF for ensemble perturbation generation. LETKF allows ecmg jobs to be turned off with inclusion of jacobians in netCDF diagnostic files	exercised in real-time parallel	10/30/2019		65874		
	GSI code optimization	Russ Treadon, Jim Abeles, Cory Martin, Kristen Bathmann			10/30/2019		Issue #68133 for write increment		
	SKEB	Jeff Whitaker	SKEB portion of stochastic physics was not ready for GFS v15 code freeze. Reincorporate SKEB in GFS v16	exercised in real-time parallel	10/30/2019				
	ENKF ensemble spread; sponge-layer tuning	Jeff Whitaker		real-time parallel uses values recommended by Jeff	10/30/2019		51179		
	~~**Cloud Analysis**~~	Yanqiu Zhu / Emily Liu	remove from GFS v16						
	Switch to netcdf diag files	Jeff Whitaker	A namelist switch in both the GSI and EnKF can be set to generate diagnostic files in netCDF format instead of the current binary format. The netCDF format is easier to work with.	exercised in real-time parallel	10/30/2019				
	Stratospheric humidity	Andrew	need an update		10/30/2019				
	NSST update	Xu Li	use more observations, sea ice related issues fix		10/30/2019		https://vlab.ncep.noaa.gov/redmine/issues/69247		
	TLNMC	Daryl Kleist, Wan-shu Wu	Recommendations on changes to strong constraint configuration	No changes unless additional runtime is needed	10/30/2019		69692		
	netCDF interface	Cory Martin and Jeff Whitaker	update all GSI code and utilities to ingest netCDF files	development in ProdGSI branch feature/fv3_ncio	10/30/2019		69217, 69073, 68591, 69326, 69328,69740		
	install CRTM 2.3.0		update GSI to CRTM 2.3.0		10/30/2019				
	install ncio module		netcdf wrapper to use in various applications		10/30/2019				
	delz increment	Cathy Thomas	pass analysis delz increment to model		10/30/2019		65376	Results	
DA data upgrade									
	New variational QC	Xiujuan Su Jim Purser	Replace current operational variational QC with new scheme	ready	10/30/2019				
	Hilbert Curve application	Xiujuan Su Jim Purser	Hilbert Curve application to aircraft data	testing	10/30/2019				
	add new CSR data	Haixia Liu	add CSR data from ABI_G16, AHI_Himawari8, SEVIRI_M08	merged to DA_GFSv16 ProdGSI branch	10/30/2019		use CSR from geostationary imagers		
	assimilate high peaking radiance channels	Yanqiu Zhu	assimilation AMSUA channel 14 and ATMS channel 15		10/30/2019				prfv3rad
Physics upgrade								new phy plan	64-L testing
	Gravity-wave drag	Valery Yudin, Shrinivas Moorthi, Anning Cheng, Jordan Alpert, Fanglin Yang	Test and evaluting the Unified Gravity-wave physics; Reinstate the old orographic GWD; tuning the GWD package to improve the simulatiuon of QBO; SAO and jets in the upper atmosphere		10/30/2019			ppt on QBO	
	Noah MP	Helin Wei, Rongqian Yang		in NEMSfvgfs; used in forecast-only and cycled runs; provide spun-up land ICs for real-time and retro runs, and for forecast-only runs	10/30/2019			Vlab Issue	
	sa-TKE-EDMF	Jongil Han		further tuning for marine stratus and tropical winds	10/30/2019			Vlab Issue	
	radiation update	~~Yu-tai Hou~~ and Hsin-mu Lin			10/30/2019				
	reduce cold bias in the lower to middle troposphere in winter	Ruiyu Sun	testing updated MP from GFDL (cirrus cloud effective radis); tuning PDF-based cloud fraction etc		10/30/2019				
	improve PBL inversion	Jongil Han and Weizhong Zheng			10/30/2019				
	canopy heat storage	Jongil Han	add code to run with Noah_MP.	tested. Improves 500-hPa ACC, but introduces cold bias the lower troposphere	10/30/2019				
parallels									
	real-time parallel	Russ Treadon and	create balanced atmospheric IC and spun-up land	terminate 64-layer real-time parallel with all available DA and model updates included; begin 127L real-time parallel from 2019082800	Q2FY21				
	forecast-only benchmark runs	all developers	to further tune the model using IFS ICs		10/30/2019				early benchmark test
EE2 kick off meeting		Fanglin Yang			12/01/2019				
MISC and low priority items									
	Dry mass conservation in 32-bit hydrostatic run								
	Update WMO OPAC aerosol climatology to more modern one for direct radiative forcing, and for computing CCN								
	Remove footprint of tile corners in model output								
	Output radar reflectivity from model instead of computing it in the UPP								
	Including ice analysis in GFS. v16 package								
	update fix/fix_gsi/prepobs_errtable. global								