## Community “Playmode USI” for Wild Blue Industries mods

<https://imgur.com/giVF9VE>

## What is does

I love the Wild Blue Industries (WBI) mods – MOLE, DSEV, Pathfinder, Buffalo. Great models, useful parts, attention to detail, and lots of good ideas which enhance my gameplay experience, such as the configurable templates.

In all my long-term career saves I am also pretty much committed to the Community Resource Pack and Umbra Space Industries (USI) ecosystems, particularly Life Support and Kolonization. Most of the parts I am using (e.g. lots of Nertea’s stuff) have some support or compatibility for CRP and USI. At some point there was at least basic USI-LS support, but then one day the USI config mechanics changed (towards swappable bays with swsapoptions), and those patches became outdated.

I used to roll my own, also very basic, based on the CRP playmode in WBI. That, however, is also no longer actively developed. So, instead of trying to patch something that itself might become outdated, I have bitten the bullet and present you the results of my work… integrating USI support (focusing on Life Support and Kolonization) into the WBI mods as a dedicated playmode which can thus be switched on or off as desired.

**What it does - example pictures**

IMGUR: <https://imgur.com/gallery/L4RGZwK>

“So it is just some MM patches for Pathfinder etc, not really a mod!”

In essence, yes. It is basically “just” configuration files which are mostly applied using module manager.

However, I am utilizing the awesome and powerful “playmode” feature of WBI to do more than just swapping out a part module here and there. With this feature, defining a “playmode” gives broad control over which templates are applied to the different parts, allowing to disable or change a lot of things (which would be totally possible with MM patches alone, but a lot more work).

This playmode is built upon the existing “CRP” playmode, with some items adapted also from ClassicStock, but disables, changes and adds some modules (habitation, life support), templates or converter recipes.

## Design Considerations

WBI and USI are based on somewhat different philosophies and design principles:

* *Long-term colonization*, especially with closed-loop resource flow, is hard

vs.

* Early stations and flexible *space-camping,* short-term habitation expandable to long-term colonization

Personally, I do enjoy both approaches and I do not see them as conflicting, but rather as highly complementary for my playstyle.

To integrate (Pathfinder/MOLE/etc.) well with USI LS and MKS, balancing the capabilities to account for the different philosophies is important, ensuring that the parts fill a specific niche and are not generally overpowered or useless.

**What’s In**

* Based on the existing “CRP” playmode, with some changes and additions
* Specifically, adds in USI-LS as life support system: LS recyclers, LS habitation, WBI greenhouses produce supplies (via agroponics or cultivation), Supplies/Mulch/Fertilizer as resource where appropriate, …
* Some changes to templates/omniconverters to be closer to the MKS production chains where appropriate
* Production parts acting as MKS efficiency modules where appropriate
* Integration of WBI resource sharing/distribution and MKS logistics on the table (see ROADMAP)
* WBI parts generally don’t enable closed-loop long-term colonization and are usually less efficient than comparable MKS/USILS parts. Keep in mind, though, that WBI parts are already very powerful and useful on their own with their template switching abilities and general capabilities.

**What’s Out**

* This is not a scientific dissertation about perfectly balancing colonization parts. I have used as-is parts analysis, best judgement, personal preferences 😊 as well as the official MKS balancing guidelines. Most things “feel right” to me. Some may be a bit off. There might also be some mistakes on my part. If you think something is vastly off scale, let me know and we’ll discuss it.
* No repackaging all of MKS’ functionality in WBI parts. It is not my goal to create WBI templates for the complete MKS production chain, for instance. I want the parts to complement, not replace, each other. Some overlap is normal, and some Pathfinder and MOLE modules give you much earlier production capabilities than MKS – but at a cost of generally being less efficient.
* No “total conversion” of WBI. Pathfinder remains Pathfinder, and MOLE remains MOLE. E.g the greenhouses work totally different from USILS/MKS (you have to wait some time for a harvest, and the yield might be lower than anticipated), and that’s what I like about them as complementary things for my stations and bases.
* No changes to Tech Tree placements (Stock and CTT). Current placements mean that MOLE & Pathfinder parts come much earlier than MKS (especially in CTT). This makes sense in the overall design (*early stations, camping before colonization*), fits my playstyle, and I don’t intend to do any changes here.

## Is it safe to drop into an existing game?

Short answer: most likely NO!

Long answer: it depends.

It is based on the existing CRP playmode, but there are some changes.

Your active stations and bases WILL be impacted – some positive (LS and habitation functions), some negative (converter recipe changed or outright no longer available).

Upon first activation and switching to a vessel there is a high chance of nullref spam. It might be repairable (->see Common Issues and Resolutions), but in a worst case that vessel is no longer usable and has to be terminated.

If you are using ClassicStock playmode, DO NOT SWITCH TO THIS PLAYMODE!

It is NOT compatible with ClassicStock – absolutely everything is different! All your classicstock resources will be gone, your production chains useless, and your bases decorative only!

USI is basically CRP with specific production chains as in MKS, and life support from USI-LS. ClassicStock is very different from this, and fundamentally makes not a lot of sense to forcefully combine with USI.

TLDR;

* Make a backup of your save before activating this playmode!
* If you are using CRP playmode and have few active stations/bases, give it a try.
* If you are using ClassicStock playmode, DO NOT activate this for your current save!

## Download, Installation & How to use

1. Install prerequisites (ModuleManager, not bundled!).

*Any WBI and USI mods are technically not a dependency, but what do you expect this one here will do without them? 😉*

1. Download and install mod from the github releases: <https://github.com/TheDogKSP/WBIPlaymodeUSI/releases>

Install path must be $KSP\_DIR/GameData/WildBluePlaymodeUSI

!Any other folder path will lead to the templates not being properly found and switched by the WBI Playmode Switcher!

1. Start KSP (your WBI playmode is something <> USI).
2. Use the WBI playmode switcher to switch to playmode USI.

DO NOT CONTINUE PLAYING, THE SWITCHED PLAYMODE IS NOT YET ACTIVE!

1. Immediately exit and restart KSP. Your playmode should now be USI.

<imgur pic here>

UPDATE WARNING: \*YOU MUST TREAT UPDATES AS NEW INSTALLS!\*

1. Download new release
2. Delete previous folder completely: $KSP\_DIR/GameData/WildBluePlaymodeUSI
3. Unpack new release.
4. Start KSP, LOAD A BLANK NEW SAVE (not your precious long-term career one with active flights!)
5. Playmode switcher will indicate you are in USI (which is not correct, but it doesn’t know), switch to “CRP”. Klick OK.
6. Immediately open playmode switcher again, switch to USI. Klick OK.
7. Exit & restart KSP. You’re good to go now!

## Common Issues and Resolutions

--INSTALL PROBLEMS--

* I have downloaded and “installed” the stuff, but nothing’s changed in game, and all your mod’s contents are just some .txt files…

Congrats on not reading and following instructions.

After installation you have to use the WBI playmode switcher to switch to this new USI playmode, then exit & restart KSP. Only then the files are loaded by KSP (changed to .cfg extension) and will take effect.

* I have manually renamed some .txt to .cfg and now everything’s a mess, duplicate templates, duplicate resources, …

YOU SHOULD ONLY EVER MANUALLY RENAME PLAYMODE FILES IF YOU KNOW PRECISELY WHAT YOU’RE DOING!

Seriously, use the WBI playmode switcher.

Your mess should clean itself up after you do the following:

* + Start KSP, use WBI playmode switcher to switch, successively, to at least 2 different playmodes (e.g. “CRP”, then “Classic Stock”).
  + Then use it a third (and last) time to switch to USI.
  + EXIT AND RESTART KSP.
* I have updated the mod, everything used to work fine, but now I have duplicate files (one with .cfg extension, one with .txt extension), the playmode switcher doesn’t work and my install is dogged…

\*YOU MUST TREAT UPDATES AS NEW INSTALLS!\*

You may never “just unpack and copy over” a new release onto your existing install, IF PLAYMODE USI IS YOUR ACTIVE PLAYMODE!

The reason behind this is that all the files in this playmode are delivered “inactive”, with a .txt extension. The playmode switcher then takes care of deactivating all non-relevant ones (such as CRP, ClassicStock, etc) while activating the USI one (=renaming from .txt to .cfg).

When a new release is published, you would end up having the files as .cfg (from the previous activating) and as .txt (from current release).  
See “Updating” under “Download, Installation & How to use”.

--IN-GAME PROBLEMS—

* NullReferenceException spam when switching to a vessel.

Usually happens when the playmode is activated the first time for an existing save. Your vessels’ modules are changed according to the specs as defined by the USI playmode. It is quite probable this leads to nullrefs from converters or the USI swappable bay.

It may “repair itself” by switching away from the vessel to KSC, then back to the vessel.

If not (nullref spam persists), then unfortunately your vessel is unhappy about the chosen template swapping in/out different modules than originally were present when launched.

Only option is to terminate the vessel, or repair it manually in the SFS savegame file (launch a new similar vessel from the VAB and then compare the exact layout of the modules & subnodes in the persistence file).

* NullReferenceException spam in the editor

Occasionally happens when loading a vessel with WBI changeable templates and USI swappable bays/converters.

Unfortunately, the USI swappable bays and swap controller dont like their swapoptions to be dynamically removed/added.

Workaround:

\* save your vessel

\* click the blue "new vessel" button, effectively emptying the editor

\* load your saved vessel

NullRefs should be gone, and the correct swaptions should be set on the USI converters (hab, ls recycler, ...).

* Changing the WBI template in flight does not affect USI swapoptions, e.g. habitat appears to continues to run even though the WBI template is switched to "Wet Workshop" (LFO storage), which does not have a habitat option.

Does always happen as the USI swapcontroller does not like its swap option to be completely removed.

Workaround:

\* leave vessel (go to KSC)

\* switch back to that vessel (flight mode)

The converter (habitat, ls recycler) is still on the vessel and shown as active, but EC consumption should be zero now and there should be no hab/recycler effect on the vessel for this part (confirm with USI LS Monitor).

* Wrong display of life support and/or habitation timers & bonuses, especially in VAB.

Can sometimes happen, especially after switching the templates multiple times, where some templates do contain USI swapoptions, and others do not.

Usually fixed by saving the vessel, then clicking the blue (new craft) button (effectively clearing everything), then loading again the vessel just saved.

## Support and Contribution

Prerequisite: reading the design considerations, what’s in scope/out of scope, as well as common issues and resolutions.

If you think something should be added/changed/removed:

* (Good) make a concrete proposal here on the forum (i.e. “make part x be a hab module with following kerbalmonths” instead of “part x is no good”)
* (Better) write and test the appropriate configuration / MM patch and post it here
* (Hero!) make a github pull request 😊

And especially regarding issues/support:

This mod is community developed, and is in no way endorsed or supported by Angel-125 (WBI) or RoverDude (USI)!

DO NOT GO TO WBI OR USI THREADS WITH SUPPORT ISSUES OR QUESTIONS REGARDING THIS PLAYYMODE!

If I find out that Angel-125 or RoverDude are pestered with stuff from this mod, I might have to consider pulling this. Thanks for your comprehension.

## Credits

WBIPlaymodeUSI builds upon and existentially requires the excellent "Wild Blue Industries" mods by Angel-125. Config files in this mod are based on, adapted from, or outright copied from, config files which are the creative works and intellectual property of Michael Billard, and are licensed under the GNU General Public License, v3. Wild Blue Industries is a copyright trademark of Michael Billard. All Rights Reserved by him. See: <https://github.com/Angel-125>

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## License & Source

GPL v3 license, see: <https://www.gnu.org/licenses/gpl-3.0.en.html>

Source files on github: <https://github.com/TheDogKSP/WBIPlaymodeUSI>

## ROADMAP

* Clarify if possible to bring onto CKAN

(must be able to handle the special update requirement (complete delete and reinstall))

* Evaluate integration of resource sharing/distribution/logistics mechanisms
  + Side-by-side running, or
  + Integration, or
  + Complete replacement of one system with the other
* More work on the production chains and load/efficiency thing