ECM: History, Overview and Revision for MechWarrior

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ECM: History and Background in MWO

ECM since implemented in December, 2012 it has been a controversial subject. In fact, hints of how overpowered it could be were dropped by the development team before its release (the developers said that the "meta" build at the time, the dual Gauss rifle Catapult-K2 would have been insane to be able to mount it), with the first balance action taken against it by restricting it to a select few chassis was made.

In effect, ECM gave a team the ability to obscure itself from radar. The absence of radar presence made gaining missile locks impossible unless ECM was countered by friendly ECM, or the locking 'Mech was in a very small sensor window between 180-200 meters. This was seen as an anti-missile shield, as it was implemented shortly after a period dubbed "LRMageddon," where balance changes to LRM's made them incredibly potent. At the time of its implementation, none of the systems it traditionally blocked in lore were implemented in MechWarrior Online, thus it did not interact with them.

ECM's effects were also more effective than they currently are – the original incarnation saw ECM remove IFF "doritos" icons from above friendly players and friendly players in the area vanished from the mini-map. After a couple of months of rage on the forums, PGI conceded that this function was too over powering for a team based game that lacked quick, efficient means of communication without the use of a third-party software.

Originally, ECM's only counter was another ECM running in its counter mode; ECM units cancelled each other out at one-for-one basis, making the victor of electronic warfare simply the team that brought more electronics. As only a limited number of chassis could field ECM, players were at the will of the Match Maker to hope that a team brought more ECM to cancel out the enemy.

Over time new counters were added to disable ECM; PPC's and NARC gained an EMP effect which disables ECM for a short period of time if the ECM carrier is hit by either of them, Beagle had an ECM cancelling function added to it, hitting an enemy in ECM with a TAG laser allowed it to be targeted, and new modules such as the Seismic Sensor, UAV, and Sensor range upgrades could make tracking ECM protected enemies possible for the duration that they were active, or within their range.

In addition to being restricted to certain chassis, ECM was later revised to have a specific hard point location, where the unit must be installed. The internal health of the ECM suite used to determine how many critical hits it can take was reduced to 3, making it one of the most fragile pieces of equipment in MechWarrior Online.

ECM: What it does in MechWarrior Online

Guardian ECM, or ECM Suite for the Clans, is an electronic warfare item in MechWarrior: Online. Guardian ECM can operate in two modes, Disrupt and Counter. Current implementation of the Disrupt Function is a passive system that provides the user with a 180 meter, 360 degree field around itself which:

- Prevents the enemy from achieving target locks against itself and any 'Mech in its projected field
- Disables the bonuses provided by Artemis
- Missile lock times on an ECM protected 'Mech receive a 100% lock on time penalty
- Normal sensor detection range of 800m is reduced to 200m for detection of 'Mechs inside of an ECM disrupt bubble

When inside the radius of an enemy ECM field, 'Mechs have additional effects levied against them;

- Cannot share or receive targeting information, including information gathered by a TAG laser
- Cannot achieve missile locks
- Receive a "Low Signal" message on the mini-map and disables the mini-map from displaying the location of enemies

A player can change the function of ECM with a bound keystroke to Counter Mode. In counter mode, the ECM suite works to counter an enemy ECM suite for a one-to-one basis.

What do these effects of ECM have in relation to impact on a game?

Preventing targeting is obviously the greatest impact that ECM brings to the battlefield; targeting in MechWarrior Online provides:

- Tracking units sensors detect outside of visual range, or in poor visibility conditions
- Information in the form of chassis type, weapons loadout, and damage readout of the targeted 'Mech
- Ability to lock on to targeted 'Mech with LRM's or Streak SRM's
- Ability for friendly units to also target a selected enemy through sharing and receiving targeting information
- Ability for friendly units to track targeted enemies out of line of sight on the mini-map

This in effect makes it much harder for a team to detect enemies. Pilots must rely on their own eyes to track enemy 'Mechs and communication to update their team on the size, location and

activity of the enemy rather than target the enemy and let their sensors share the information automatically to other ‘Mechs.

This negation effect of targeting also effectively removes LRM’s from play, as dumb fired LRM’s with their slow projectile speed are largely ineffective against anything but the slowest moving assault ‘Mechs or ‘Mechs that are shut down.

The inability to target also limits the ability of a team to decide which ‘Mech to prioritize fire against, and withholds information on what kind of weapons the ‘Mech may be using to formulate a strategy against, and what areas may be damaged or weakened.

In the casual arenas, comprised mostly of either solo players arranged on a team by a matchmaker or smaller groups combined to form a 12 man team, the effects of ECM is widely more apparent. As such players do not have the ability to communicate before a game; a player may find himself placed randomly on a team that does not have any counters for ECM up against a team with several ECM suites.

These effects largely are unnoticed in the higher echelons of group play in MechWarrior Online; coordinated teams more often than not work as a unit communicating on third party software such as TeamSpeak which allow them to instantly verbalize changes in battlefield conditions. To that effect, they can share information instantly, without needing to share target information through sensors. These players are also more aware of the counters required to disable ECM, and as they are coordinated, can be prepared by making sure the players on the team bring the right equipment to mitigate enemy ECM.

Still, ECM provides utility at high level play where teams coordinate and plan their drop decks and the ‘Mechs and equipment in them accordingly – against three identical enemy ‘Mechs painted the same with the same weaponry in a dynamic battle, keeping track of which ‘Mech is which without actual solid target designations can be difficult. Most competitive players, however, are keener to recognize a sign of damage and weaknesses even without target information, so this denial of information is not as critical to the competitive player as it is to casual players.

Casual players are less able to react to the effects of ECM as they do not have quick or efficient means of updating changing locations and actions of enemies, who to prioritize fire against, and formulating/executing plans to disable enemy ECM by means of counters – they must rely on typing into spatial chat, where group players can communicate the same information instantly over voice communications.

Casual players are also much more likely to use Long Range Missiles; LRM’s are considered to be easier weapons to use as they can achieve locks that guide the missiles towards a target. Because LRM weapon systems are capable of indirect fire upon enemies targeted by friendly

units through target sharing, many MechWarriors choose to fill a support role by standing in the back lines or behind cover firing LRM's to support the front line either by damaging enemies directly with missiles or denying their movement by keeping them behind cover so maneuver elements can move to engage.

These guided weapon systems, however, are not popular amongst competitive group players for several reasons:

LRM's feature a grouping system which inconsistently spreads missile damage across a target – where a casual player may find the solace in the fact that LRMs are guided and is satisfied with the fact that he just *hits* a target, a competitive player who has a much greater grasp on laser and projectile weapons in MechWarrior Online and can consistently achieve hits on a target at longer ranges than the 1000m LRM range, prefer the ability to pinpoint exact locations that they intend to damage.

LRM's guidance systems require that a firing unit maintains a lock. Battlefield conditions such as cover and concealment can disrupt line of sight, breaking missile locks and forcing the salvo to miss. Spotters are often preoccupied by avoiding enemy fire to maintain shared targeting long enough for LRM salvos to be guided during their entire flight time to target, making LRM accuracy as a whole quite low, even though they have the ability to be guided. Because LRM guidance requires maintaining the locked target reticle in the vicinity of the targeted enemy, guiding LRM's during their whole flight time also puts the firing 'Mech at risk – if it moves its torso to try to spread damage from incoming fire across different components it may lose its missile lock entirely.

The proliferation of ECM means the amount of equipment that has to be taken to disable the ECM to use such an inconsistent weapon system that requires so many moving parts to effectively use is better spent forgoing taking LRM's (which are generally heavy with large critical space and ammunition requirements) completely as more accurate direct fire weapon systems can be spent elsewhere on weapons that have better accuracy and consistent damage abilities – LRM's as a whole are considered by most groups to be simply not worth the hassle.

The effects of ECM on long range missiles are an effective hard counter. Even if the firing unit is outside of the ECM field, locks cannot be achieved as enemies cannot be targeted. If a 'Mech with guided missiles finds itself inside of an enemy ECM bubble his missile systems cannot achieve locks, even against enemies outside of the ECM field -- A player may find the majority of his weapons nearly useless by facing ECM either by not being able to target enemies to get locks, or by being too close to an ECM 'Mech. LRM's may still be fired, but with a very high arc and slow projectile speed, dumb firing LRM's in this manner is only effective against very slow

or shut down targets. Indeed, even with locks, the time to target and warnings provided against LRM attack's allows a player to seek cover and negate the missiles fully.

Since its implementation, ECM in MechWarrior Online has received several counters:

- PPC/ER PPC hits against an ECM 'Mech can temporarily disrupt an ECM field
- NARC Beacon can "burn" through an ECM field, disabling an ECM field if the ECM carrier 'Mech is hit with a NARC pod
- TAG can be used to target 'Mechs protected by ECM
- Seismic Sensors can detect movement of 'Mechs protected by ECM beyond line of sight
- UAV modules can detect all units regardless of line of sight or ECM coverage within its radius
- Beagle Active Probe is a hard counter for ECM within its operating range, and can extend the window of detection of ECM 'Mechs beyond 200 meters
- Sensor modules can extend the detection of ECM protected 'Mechs beyond 200 meters

There is a slight disparity between the passive function of ECM and most of the counters. While Beagle is also a passive system, PPC's, and NARC are unguided projectiles and TAG is a laser which have a skill component requiring a player to hit an ECM 'Mech to disable its ECM, vs ECM's passive requirement of simply needing to be present.

The modules that counter ECM require a significant GXP and c-bill requirement to unlock (usually several million c-bills per tier), and consumable modules such as the UAV have recurring costs in either c-bills or MC every time it is used versus the single purchase and install of the 400,000 c-bill Guardian ECM suite.

ECM: What it does in Battletech lore and rules

ECM was first introduced to Battletech in *Technical Readout: 2750* – at the time, its effects were completely limited to hiding unit identification in the Battletech spin-off game, Battleforce. Since that publication, official rules for the device outlining what ECM does has been written in rule books, and fluff describing its in-universe explanation on how it functions has been included in several Technical Readouts;

> "The Guardian emits a broad-band signal that interferes with all sonar, radar, UV, IR, and magscan sensors, thus protecting all units in a radius of up to 180 meters by projecting a "cloak" to its enemies. ***Enemy long-range sensors can find vehicles and 'Mechs within the curtain, but the Guardian obscures the reading and prevents identification***. By the time the enemy enters visual range, sensors can sometimes override the jamming, but by this time most pilots rely on their own eyes to track the opposition."
>
> - *Technical Readout: 3050 Revised*, pg 196

In its most current Battletech rule set, *Total Warfare*, ECM has the following functions:

> Within its effect radius, an ECM suite has the following effects on the following systems. ***The ECM suite does not affect other scanning and targeting devices***, such as TAG and targeting computers.
>
> **Active Probe:** Active probes cannot penetrate the ECM's area of effect. The probing unit would notice that it is being jammed, however.
>
> **Artemis IV FCS:** ECM blocks the effects of Artemis IV fire control systems. ***Artemis-equipped launchers may be fired as normal missiles through the ECM***, but they lose the Cluster Hits Table bonus.
>
> **Narc Missile Beacon:** Missiles equipped to home in on an attached Narc pod lose the Cluster Hits Table bonus for that system if the pods themselves lie within an ECM "bubble." The Narc launcher itself (standard and iNarc) is not affected by ECM.
>
> **C3 and C3i Computer:** ECM has the effect of "cutting off" any C3-equipped unit from its network. If a C3 master unit is isolated from the network because it ventures inside the ECM radius, the entire portion of the network below it is effectively shut off (all units subordinate to it on the diagram on p. 132). Only those C3 units able to draw an LOS to the master unit that does not pass through the ECM radius can access the network. If the master unit that connects the lances of a company lies inside the ECM effect radius, the link between the lances is lost, though each lance's network functions normally (unless the ECM also interferes with them individually). – *Total Warfare*, pg 134

The lore description of ECM describes it as a system that confuses sensors, but does not outright defeat them, as explained by the passage:

"Enemy long-range sensors can find vehicles and 'Mechs within the curtain, but the Guardian obscures the reading and prevents identification."

This is supported by the rules that say that the ECM suite does not affect scanning and targeting devices. Artemis improved missiles can still function as standard missiles -- this is supported by the description from the TechManual, a Battletech publication that provides in-detailed descriptions of the equipment found in its universe:

> "Today's vehicular-scale missile launchers are a broadly varied weapon class used to deliver clusters of self-propelled—and usually self-guided—munitions to a target. Not to be confused with capital scale missile launchers (or the Arrow IV artillery missile that will be discussed in a later text), the missiles mounted on many BattleMechs and Combat Vehicles are much smaller in size and power, ***adapted to the electronic noise, limited sensor acuity and effective armor in the tactical battlefield."***
>
> -*TechManual*, pg 229

The *TechManual* explains that long range missile systems are self-guided, and have been adapted to be used on the battlefields of the Battletech universe, even with electronic warfare present. According to the published fluff and basic rules, ECM does not affect a 'Mechs ability to locate or detect an enemy 'Mech, and has no effect on the guidance systems of missiles.

The *Tactical Operations* expanded rule set includes several additional rules regarding Guardian ECM, notably in the Double Blind rules. Similar to MechWarrior Online, Double Blind rules require units to be spotted before they can attack. The most basic spotting is visual in line of sight – However, unlike in MechWarrior Online, which only allows 'Mechs directly in line of sight to be targeted, *Tactical* Operations allows units out of sight to be detected by different sensor types, the most basic being 'Mech Sensors. Several modifying penalties for range and battlefield conditions can affect a 'Mechs ability to detect an enemy unit, ECM included.

With ECM present the chances for spotting an ECM protected 'Mech is very low for standard 'Mech radar – within short ranges of 'Mech radar (8 hexes, or 240 meters), a sensor check succeeds with a roll of 6 or seven after modifiers. Attempting to detect a 'Mech in enemy ECM adds a +5 modifier to any roll, so any roll over a two means the 'Mech attempting to spot with sensors fails to detect – a 2.77% chance. Using Beagle Active Probe increases this chance to 8.33%, as Beagle only has a +4 modifier to rolls so a roll of 2 or 3 on 2D6 would succeed.

Tactical Operations doesn't differentiate between a unit being visually located to being located by sensors in regards to making weapon attacks against it, and LRM's in Battletech do not require targeting and locking in the way that MechWarrior Online does -- MechWarrior Online does not allow for sensors to be used beyond line of sight like *Tactical Operations* does (the conditions where sensors would be affected by ECM when spotting) – in translating ECM into real time, the developers at PGI added the effects of ECM to all sensor checks in MechWarrior Online, regardless if the target can be visually spotted.

A feature that ECM includes in *Tactical Operations* that doesn't make an appearance in MechWarrior Online (at least at the surface) is a third mode called "Ghost" mode:

> "An ECM suite can be tuned to generate "ghost targets" that may affect the ability of enemy units to properly target friendly units. The ECM loses its normal functions when used in this way."
>
> - *Tactical Operations*, pg 101

The original in game rules for Ghost mode made ECM sacrifice the capabilities it had outlined in the base *Total Warfare* rules, meaning it no longer blocked enemy Artemis, Beagle, C3, or NARC. Instead, Ghost mode added an additional +1 to-hit penalty against targets inside of an

enemy ECM radius (The original rules were much more complicated, and were revised in *Tactical Operations Errata v 3.1*). This additional penalty may have been the reason that PGI had decided to include a penalty to lock on time for guided missile weapons against 'Mechs inside the radius of an enemy ECM suite.

Units protected by ECM are more difficult for sensors to probe for information as well – this in *Tactical Operations* is described scanning rules on pages 218-19. Sensor checks against ECM protected enemies need to roll 2D6 with a result of 8 or higher. This gives 'Mechs a 41.66% chance that they will succeed in scanning the 'Mech to identify it or gain information on its damage and weapon status. This would be represented in MechWarrior Online as gathering the target information, or "paper-doll" readout players receive when they target an enemy.

ECM in MechWarrior Online Revised: A Proposal

Players are generally split between two camps in regards to ECM; one believing that ECM is overpowered and has too much utility for a 1.5 ton passive system and strayed too much from the original Battletech lore. An opposing view believes that ECM is a natural check and balance to LRM indirect fire, which many players view with disdain as such attacks can be made from behind cover with no option of reprisal from direct fire weapons, and that ECM provides the game with unique tactical options as a stealth system that they do not want to see removed.

The challenge in finding a balance proposal that can address the concerns is compounded by the fact that Russ Bullock had voiced intent to make changes solely to ECM. This proposal attempts to rebalance ECM as to bring it more in line with other equipment in the game, and to where it still remains an effective counter for LRM's, while still remaining faithful to the source material from the lore.

Proposed function of ECM in Disrupt Mode:

- **Normal sensor detection range of 800m is reduced to ~~200~~ 240m for detection of 'Mechs ~~inside of an ECM disrupt bubble~~ equipped with ECM**

As ECM serves as our stealth system in MechWarrior Online, the following rule is adapted from *Tactical Operations* and applied:

> "[…]To be affected, the spotting unit must be in the normal operating radius of the ECM/stealth system (***note that stealth systems only affect the target unit and do not have a radius of effect, and so are only taken into consideration for the unit mounting that equipment***). "
>
> --*Tactical Operations*, pg 224

Although pure stealth is provided by Stealth Armor in the Battletech universe, removing the sensor immunity from ECM totally would remove or greatly diminish the ability of several roles in the role warfare pillar of MechWarrior Online's game design, notably scout 'Mechs and sniping platforms.

ECM retains its ability to reduce detection range, but the range is adjusted to 240m (bringing it in line with the range where detecting ECM 'Mechs with standard sensors becomes possible in *Tactical Operations),* but now detection is reduced only for 'Mechs actually mounting ECM. 'Mechs inside of enemy ECM can be detected by sensors at 800m like 'Mechs outside of an ECM field, but suffer the later mentioned penalties to lock or gather information.

This change would be one of the largest balance changes in casual play. As casual players do not normally have access to quick communication with the teammates they are randomly assigned by the matchmaker, sharing target information is often the quickest, most efficient way of sharing up to date reports on enemy location. While the actual carrier of the ECM cannot be tracked still, any units around it in unobstructed line of sight to sensors can be targeted, shared and tracked by a team.

- **Prevents the enemy from achieving target locks against itself ~~and any 'Mech in its projected field~~**

As the 'Mech equipped with ECM is the only 'Mech that now enjoys reduced detection range, it is also the only 'Mech in an ECM bubble that remains impervious to missile locks. This change is supported by the lore that says units inside of an ECM field can be detected, and as they can be targeted, they can be locked, supported by the rules and lore that state LRM's are unaffected by the presence of enemy ECM.

- **Missile lock times on an ECM protected 'Mech in line of sight receive a 50% lock on time penalty; Missile lock times on an ECM protected 'Mech beyond line of sight (indirect LRM fire) receive a 100% lock on time penalty**

Enemy 'Mechs who are targeted inside of an ECM bubble will soft counter guided missile locks by incurring a 50% lock on time penalty to guided missile systems such as Streak missiles or LRM's attempting to obtain locks against them.

This is an interpretation of translating the +1 to hit modifier Ghost rules from *Tactical Operations* into the real time environment of MechWarrior Online. Indirect fire rules from *Total Warfare* add an additional +1 penalty for indirect LRM attacks; this is translated into our real time MechWarrior Online by making obtaining locks for indirect fire attacks against ECM protected enemies take much longer. For the sake of simplicity, this feature of Ghost mode is included as a function of Disrupt mode.

This change would mean that though guided weapons no longer need additional equipment to obtain locks against forces equipped with ECM, but still provides some degree of protection from guided missiles (especially indirectly fired) with a soft counter lock on time penalty.

- **Target information gathering times on a target inside an enemy ECM field receive a 100% gathering time penalty**

As supported by the description in the lore and the scanning rules reviewed from *Tactical Operations*, sensors have difficulty identifying and scanning detected 'Mechs inside of enemy ECM fields. This is translated into MechWarrior Online by a 100% penalty to target information gathering time. This penalty reoccurs every time a new target protected by enemy ECM is targeted.

Though no longer a hard counter to obscuring tactical information like chassis type, weapons load out, or damage condition as it previous was by preventing *any* target information, the longer delay obtaining target information and reset every time a new target in an enemy ECM field is selected makes prioritizing and coordination of focus fire more difficult.

- **Disables the bonuses provided by Artemis, disables bonuses provided by NARC beacon to 'Mechs inside of an ECM disrupt bubble**

In the rule set and lore, the effects of NARC are countered by ECM. In MechWarrior Online, this was amended to where NARC is a counter to obtaining missile locks on targets inside enemy ECM; with the proposed balance changes removing the hard counter function of sensors and by extension missile locks on 'Mechs inside enemy ECM not carrying ECM equipment, NARC remaining a counter to ECM is redundant. Thus, ECM regains its ability to counter NARC, and any friendly unit affected by a NARC pod has the effect of the NARC pod disabled while inside of the radius of friendly ECM.

The effects of Artemis for attacks on 'Mechs inside the radius of enemy ECM is unchanged; ECM still disables any missile grouping and tracking bonuses provided by Artemis fire control systems.

- **Cannot share or receive targeting information, including information gathered by a TAG laser while inside the radius of Enemy ECM**

'Mechs inside of the radius of enemy ECM cannot share or receive targeting information. This feature of ECM is retained as a stand in for the fact that ECM in the lore disrupts the sharing of C3 information through an ECM field; though we do not have C3 in MechWarrior Online, retaining this ability provides a unit with ECM additional protection from spotting of LRM's – though enemies may be targeted by units inside the enemy ECM, since the information cannot

be shared, indirect fire cannot support them without manually spotting and targeting the enemies visually.

- ~~**Cannot achieve missile locks**~~ **Missile lock times while inside the radius of enemy ECM receive a 100% lock on time penalty**

Previously, guided missiles were unable to lock at all when inside the operating range of enemy ECM. This allowed an enemy beyond line of sight to negate a 'Mechs guided weaponry completely, even against enemies outside of the ECM bubble unprotected by ECM. This is changed to a 100% lock on time penalty for missile attacks so that they are no longer completely countered by ECM, but greatly hindered in its presence, notably Streak SRM locks against ECM protected fast moving light 'Mechs.

- **Receive a "Low Signal" message on the mini-map and disables the mini-map from displaying the location of enemies while in the radius of enemy ECM**

This feature of ECM remains unchanged, supported by the description in lore and rules in *Tactical Operations* stating that the ECM disruption is strongest inside of its 180m operating radius. While enemy targets inside of enemy ECM that do not have ECM equipped themselves may still be targeted as long as they are in the line of sight of sensors, their location will not appear on the minimap.

ECM Revised: Counters

- **PPC/ER PPC hits against an ECM 'Mech can temporarily disrupt an ECM field**

No change. ECM carriers have their ECM disrupted when hit by a PPC/ER PPC.

- ~~**NARC Beacon can "burn" through an ECM field, allowing targeting of a 'Mech affected by NARC even if it is in an ECM field**~~

NARC no longer is a counter to ECM; any unit affected by NARC has the effects of the NARC countered while inside the radius of friendly ECM

- **TAG can be used to target 'Mechs protected by ECM**

No change, using TAG against an ECM protected 'Mech will bestow the benefits of TAG, unless the TAG spotting unit is inside the radius of enemy ECM

- **Seismic Sensors can detect movement of 'Mechs protected by ECM beyond line of sight**

No change, seismic sensors are not affected by the presence of enemy ECM.

- **UAV modules can detect all units regardless of line of sight or ECM coverage within its radius**

No change, UAV's may still detect all units inside of its detection radius normally, regardless of ECM.

- **Beagle Active Probe is a hard counter for ECM within its operating range, and can extend the window of detection of ECM 'Mechs beyond ~~200~~ 240 meters**

Beagle continues to function as normal against enemy ECM, countering ECM equipped 'Mechs within its operating range, while aiding in detecting ECM 'Mechs at greater ranges than standard sensors.

- **Sensor modules can extend the detection of ECM protected 'Mechs beyond ~~200~~ 240 meters**

The only change to Sensor modules effects against ECM is that their bonuses stack on top of the new extended base ECM detection range by sensors of 240m.

ECM Revised: Conclusion

The largest notable change is the stealth ability removed for team mates inside friendly ECM that do not have their own ECM equipped. This removal of ECM's hard counter to sensors and LRM's leaves them opened up to targeting and missile locks, but ECM still provides a utility to the team with an LRM soft counter, a longer lock on time penalty. ECM still disrupts a team's ability to coordinate against an enemy by withholding targeting information for much longer times, but it does not completely deny it like currently.

Retaining stealth abilities for individual 'Mechs with ECM does not affect the roles certain 'Mechs perform, such as scouts, spotters or snipers. 'Mechs with ECM can still perform these tasks independently or with other 'Mechs equipped with ECM, they just cannot lend their ECM stealth to others.

The proposed changes address the problems most people have with ECM; it removes the total stealth field but retains some stealth for players, it retains the flavor of the lore but adapted to a real time simulation, and remains as a counter to LRM fire – with changes it still provides great function for a 1.5 ton piece of equipment -- missiles are deterred with longer lock times, valuable tactical information is still withheld, but this 1.5 ton piece of equipment no longer has the ability to passively hard counter every missile system on a map just by being present.