VEHICLE OPS:

Signals Intel

INTRODUCTION

Rules for sensors and communications in Fantasy Flight Game's Star Wars RPG's are sparse and sometimes contradictory. Rules described by one piece of gear are often quite different than those described for a similar piece of gear. Some gear or attachments makes others completely obsolete and non-desirable. Communications or "comms" of huge, expensive vehicles are limited to 100's of kilometers while a cheap, portable comm can reach across light-years.

This document attempts to alleviate these problems without making too many actual changes or, "house rules". Yet, some are still needed. But, most of this document still involves clarifications and examples when possible over changing of the rules-as-written, or "RAW".

Don't be scared of its length. The rules below are actually quite limited. The explanation and examples make it lengthy.

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CREDITS

VEHICLE OPS SERIES

This is a portion of the greater *Vehicle Ops* series of fan-made supplements. Each tries to provide greater detail to vehicle operations while not changing any core book rules, if possible. While each may be used separately, these supplements will sometimes refer to each other. See Sturn's Stuff for more.
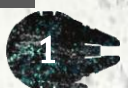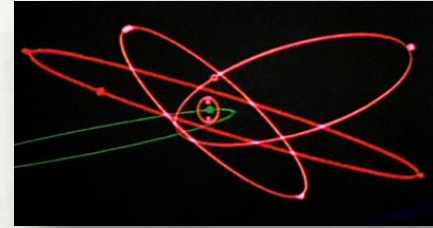
STELLAR SCALE

In RAW, Comm ranges for vehicles are based upon their Sensor range. However, this greatly limits the range of communications in the game, whereas in our modern world and within the Star Wars universe, communications are expected to span great distances.

Core rulebooks include ranges of Character scale and Planetary scale. Planetary scale has two subdivisions for vehicles for ground (including atmosphere) and space combat. These ranges are too short for comms, so we introduce a third **Stellar scale**. This new scale is used only in the vacuum of space and primarily only for comms aside from one exception (see below). Stellar scale would never be used for weapons or movement.

The Stellar scale is used only for projection into, out of, or through space. Sensors or comms transmitting through space, but partially hindered by an atmosphere (projecting into or out of) use the Stellar scale, but reduce their range by one. Comms operating completely upon the surface of a planet (sensor and target) should use the Planetary (ground) scale due to interferences (blocking terrain, vegetation, and atmosphere).

See *Table 1: Stellar Scale* for example ranges and communications:

Table 1: STELLAR SCALE			
Range	**Example Distances**	**Starship Comms Example**	**Gear Comms Example**
Close	To orbit, across a planet.	Common on short-ranged Starfighters.	Comlink. *Core rulebooks.*
Short	To another planet in the system.	Common on long-ranged Starfighters and short haul Transports.	Long-Ranged Comlink. *Core rulebooks.*
Medium	To a nearby star system, 10's of light years.	Common on long haul Transports.	Short-Ranged Transceiver. *Suns of Fortune.*
Long	Across a subsector, 100's of light years.	Common on Capital ships.	Long-Ranged Transceiver. *Suns of Fortune.*
Extreme	Across a sector, 1000's of light years.	Uncommon on Capital and Scout ships.	Extreme-Ranged Transceiver.

COMMS RULES

For simplicity, comms rules are divided into two steps: **Interception** of the signal and **Decoding** of the signal.

"Comms" as used here as a general term for two types of communication devices: **Comlinks** and **Hypertransceivers**. Comlinks use radio wave communcation. Thus they are limited to in-system communications (Close and Short range), travel at lightspeed (which may take several minutes or even a few hours to traverse a star system), but have high bandwidth and are relatively cheap. Hypertransceivers, or just "transceivers", use hyperspace technology so are instantaneous, very long ranged (Medium through Extreme), but are very low in bandwidth and expensive.

Only hypertransceivers may receive or transmit while in hyperspace. Comlinks require real-space.

INTERCEPTION

To receive a message, your comms device of course must be in range of the sending device. Comms devices are given a range from Close through Extreme. Vehicles by default have a comms range equal to their sensor range. This can be modified by an attachment. Comms of Close and Short range are considered Comlinks while those of Medium through Extreme range are considered Transceivers. Radio wave and hyperwave communications are not compatible. A comlink may not speak directly to a transceiver. However, any transceiver includes the cheaper radio wave technology (Short ranged) when needing to speak directly to a comlink.

Comms use the Stellar scale when either the sender or receiver is in space. If either the sender or receiver (just one of them) is upon a planetary body with an atmosphere, reduce range by 1 band. If **both** the sender and receiver are upon a planetary body (atmosphere or not), don't reduce the range, but use the Planetary scale.

> Two starfighters in deep space would communicate using Stellar scale with no range reduction. An outpost upon an airless moon sending a message to a passing starship would also use un-reduced Stellar scale. A person with a comlink on the surface of Alderaan trying to hail a ship in orbit would use Stellar scale, but range would be reduced by 1 band. Two persons on Tattooine trying to speak between their landspeeders would do so only at Planetary scale.

Picking up a signal actually intended for your sensor station by <u>any</u> sort of comms is **Simple** and thus no check is needed unless there are other factors at play. Detecting and intercepting a comlink message or data not intended for you is by default a **Simple (–) Perception** check. Transceiver messages are more difficult to intercept. Their signals are automatically considered "hardened" and require a **Hard (◆◆◆) Computers** check.

The final difficulty can vary widely depending on interferences (see below). For example, picking up a random comms signal when arriving in a desolate star system should also be **Simple**. But, imagine picking up a specific signal amongst the constant electronic traffic of the towers of Coruscant? Or through interferences caused by electronic disturbances or terrain? The referee should take all of this into account and provide a difficulty to detect and intercept a specific signal.

If actively looking for a signal, **Computers** or **Perception** should be used which is the default skill. If manning a station hoping to intercept a message, **Vigilance** may be more appropriate.

> PCs in a YT-1300 arrive from hyperspace at a safe jump distance from a forested moon. Their contact is below them on the surface. The YT-1300 has Short range sensors and thus Short range comms and wishes to hail their contact. The atmosphere and forest canopy of the planet covering their target means their comms ranged is reduced by 1 band to Close range, but still at the Stellar scale. But, they know the location of the contact who is awaiting their arrival, so the check is only **Simple (–) Perception**. The referee reports no roll is needed to hail their contact, but they first must approach the orbit of the moon to get within Stellar scale Close range.

Once the signal is located, it is a simple matter to keep receiving the message unless it passes out of range or some new interference arrives causing a new check. Some messages may have so much interference that the signal will automatically be lost after an amount of time (see below). Receiving the message does not mean you understand it. Some messages may be scrambled, encrypted, or even need translated. Even when the final message is descrambled, decoded, and translated, use of secret code words may still make it unintelligible.

Hardened Signals: Some communication devices are considered, "hardened" making their messages much more difficult to detect and intercept. As mentioned above, by default, transceiver messages are automatically hardened due to the difficult nature of picking up such signals unless it is directed at the receiver. Some comlinks are also considered hardened due to special electronic methods. Hardened signals require **Hard (◆◆◆) Computers** to intercept.

Skipping: Comlinks can't broadcast to the far side of a planet, but may be may be skipped off an atmosphere (if on a planetary surface with an atmosphere) or off another planetary object (bouncing a signal off of a moon to a target on the other side of its planet or vice-versa). This is difficult and requires a **Hard (◆◆◆) Computers** check to establish connection between comlinks. Due to changing atmospheric conditions, an atmosphere skip or a skip through an atmosphere to a moon will have a good connection for a matter of

minutes (approximately 10 minutes per ☀). If skipping off another moon or planet and neither has an atmosphere, the connection will typically last for 1 hour per ☀.

Relay Stations: Comms may be able to broadcast and receive outside their range with the help of relay stations. These consist of towers and satellites for forwarding comms signals that are common within civilized worlds and systems. The comm only needs to be in range of the relay station in order to benefit from the extended range of the relay network. Relay stations come in two forms: Transceiver (serves transceivers only) and Comlink (serves comlinks only).

Ranges of re-broadcast of the relay station may vary. Planetary Comlink Relays typically have a range of Close since they are only used to broadcast around a planet and/or to orbit. System Comlink Relays will have a Short range. Transceiver Relays have at least a Medium range (common in portable devices). But, larger, permanent, Long ranged Transceiver Relays are far more common and Extreme may also be found. Note that the range of a relay is only important for it to reach another relay that is on the network.

The Holonet is the most well-known Transceiver Relay network. It allows instantaneous transmissions across the civilized parts of the Galaxy, which is huge (120,000 light years across). But, the Holonet is completely controlled by the Empire allowing it instantaneous communications across the Galaxy. Other transceiver networks exist, but limits are placed upon them by the Empire that keeps their range to Sector-sized at the best.

Counter Signals-Intel: If the targeted comms station or network has persons or programs in place to check for spying, any attempt at interception should be automatically upgraded. ⚙⚙⚙ or ▽ generated by such an attempt should alert the comms station or network to the spying attempt including its location. The Holonet during the age of the Empire is always being scoured for intrusion and so any interception attempts are always watched for and thus upgraded.

Scrambling: Com scramblers are devices which instantly garble any message sent unless the receiver also has a linked com scrambler. Scrambling adds ■■ to any attempt to intercept the message. Note that scrambling may even be added to a simple default check causing a comms check of **Simple (■■) Computers**.

Jamming: Any comm device with a Com Jammer attached may be used to cause interference within a greatly reduced range. Only comlinks may jam comlinks while a transceiver is needed to jam another transceiver. Recall that all transceivers may alternately transmit as comlinks up to Short range. The comm broadcasts static on all frequencies causing messages within range to be hard to discern. A comm jams up to its range in **Planetary scale only**. Jamming adds difficulty to any interception attempts. The added difficulty varies by the strength of the comm and the range to it. The base difficulty is determined by the range of the comm causing the jamming: ◆ for a Close range comm through ◆◆◆◆◆ for an Extreme range

comm. This added difficulty is experienced at Close range to the jamming. For each range beyond Close, reduce the difficulty by one.

Each ☀ allows unhindered communication with the targeted recipient for approximately 1 minute. If the strength of the jamming (difficulty) increases, the signal is automatically lost until a new check is made. Conversely, if the jamming ends the conversation may continue indefinitely.

While jamming, the comm device can't also be used for communications. Also, the jamming causes *Boosted Emissions* (see *Conditions* below).

> A vehicle with Medium Range Sensors thus has Medium Range Comms. A Com Jammer is attached and it starts broadcasting interference. The base difficulty to use comms at Close Planetary range to the vehicle is ◆◆◆. At Short range the difficulty is ◆◆. At Medium range, ◆.

Piggybacking: Piggybacking involves sending a cloaked message attached to one being sent by another comms device. Piggybacking is performed to help avoid detection when using another's comms network. For example, a rebel agent may wish to send a message across the Empire instantaneously using the Holonet. Without official access, this intrusion could be detected. Successfully piggybacking a message with a legitimate one reduces the chance of discovery of the network's use. A **Hard (◆◆◆) Computers** check is made by the sender as the message is being sent. Note that this is not an Interception check, so do not upgrade it due to Counter Signals-Intel. The receiver must also have access to a transceiver in range of a relay of the same network and make an Interception check as if trying to receive a message not intended for him - the cloaked message was not sent to them. But, **each un-cancelled ☀ by the sender's Piggybacking check provides ⚡ to the Interception check.** Failure means the attempted was rejected by the relay and any attempts to piggyback on the same relay station or using the same comms device will automatically be upgraded with ⚙⚙⚙ or ⬤ revealing the sender's location. Note that the receiver will not need to make an Interception check if the message was not sent (it failed, nothing arrives). But, the receiver will not know successful the sender was.

> A smuggler wishes to instantly send a message to a client that the scam is up, don't arrive for the pick-up. The smuggler's ship has a Medium ranged transceiver and a nearby star system has a Holonet transceiver relay. The smuggler uses **Hard (◆◆◆) Computers** in an attempt to piggyback the message upon another authorized one. He fails. It is so important he tries again with **Hard (◆◆⬤) Computers**. Luckily this second attempt is not noticed by Counter Signals-Intel and succeeds with ☀☀. The receiver makes an Interception check using **Hard (◆◆◆) Computers** for Holonet transceiver messages. But, the success by the sender allows him to add ⚡⚡ to help avoid notice by Counter Signals-Intel or the legitimate sender that may be watching (alerted with ⚙⚙⚙ or ⬤).

DECODING

As noted above, it is a relatively easy matter to pick up someone's message unless it has been hardened in some way. Those wishing to keep their messages or data secret often resort to encrypting their message and/or scrambling their signals. Even so, a skilled slicer may still be able to decode the message.

Encryption: A person with a computer, enough skill, and enough time, may attempt to encrypt a message before sending it using Computers with the difficulty set by the difficulty of encryption desired. For example, **Daunting (◆◆◆◆) Computers** is required to encrypt a message so that **Daunting (◆◆◆◆) Computers** or a code key is needed to decode it. Manual encryption is not a quick process requiring several minutes for a simple message up to hours or even days for very large amounts of data (the Death Star plans).

Encryption devices are available which may add an additional level of encryption to a message. This is done instantly as the message is sent and may be combined with any encryption. Encryption devices automatically upgrade the difficulty of decoding the message, whether or not the message has also been manually encrypted.

> The PCs are manning a rebel listening outpost set up upon an asteroid to monitor an Imperial naval yard orbiting an inner system planet. The rebels have been given a transceiver with a Medium range. The naval yard is easily within range since the transceiver can even reach the rebel sector base in a nearby system 20 light-years away. The referee determines an important message regarding arrival of the sector's Imperial Moff is being transmitted to the naval yard. The referee calls for a **Hard (◆◆◆) Vigilance** check (default difficulty for transceivers) since the PCs were just taking turns monitoring the comms station. A success results in the message being intercepted, but the referee decides it will require **Formidable (◆◆◆◆◆) Computers** to decode it. If the interception roll goes badly and ✵✵✵ or ▼ is rolled, the referee may decide the comms station has been revealed due to counter signals-intel.

COMMS EQUIPMENT

Some of the comms related gear and attachments have qualities or rules that were inconsistent with themselves or the house rules above. However, most just needed some further clarification. The current relevant items (with notes on any changes made in *italics*) are below.

GEAR

HANDHELD COMLINK   *clarification only*
Small Close range comlink. May only use comlink relays (not transceiver).
Price: 25 ⚡
Encumbrance: 0
Rarity: 0
Source: Core (p. E 171, A 186, F 180)

MANPACK COMLINK   *slight change (name only) & clarification*
Portable Short range comlink. May only use comlink relays (not transceiver). *Name was changed due to the confusion of a, "Long-Ranged Comlink" having a "Short" range.*
Price: 200 ⚡
Encumbrance: 2
Rarity: 1
Source: Core (p. E 171, A 186, F 180)

HARDENED COMLINK   *clarification only*
Portable Short range comlink. May only use comlink relays (not transceiver). Signal is hardened to **Hard (◆◆◆)**. Automatic ✸✸ when attempting to transmit through jamming.
Price: 450 ⚡
Encumbrance: 3
Rarity: 4
Source: Dangerous Covenants (p. 56)

PTP COMLINK   *clarification only*
Portable Close range point-to-point comlink. May only communicate with another linked PTP Comlink which creates a closed network. Interception is considered as a Hardened signal requiring **Daunting (◆◆◆◆) Computers**.
Price: 100 ⚡
Encumbrance: 2
Rarity: 7
Source: Strongholds of Resistance (p. 111)

PORTABLE COMLINK RELAY *new*

A small comlink relay that can automatically intercept and relay a high volume of transceiver or comlink messages to other comlinks, transceivers or relay stations within Close range.

Price: 4,000 �
Encumbrance: 15
Rarity: 4
Source: New

MEDIUM-RANGE TRANSCEIVER *new*

Portable Medium range (25 light-years) transceiver. May only use transceiver relays (not comlink relays). Interception of transceiver messages are automatically hardened to **Hard** (◆◆◆).

Price: 1,000 ⧐
Encumbrance: 4
Rarity: 3
Source: Suns of Fortune (p. 100) / New (implied in Long-Range Transceiver description)

LONG-RANGE TRANSCEIVER *slight change (price) & clarification*

Portable Long range (100 light-years) transceiver. May only use transceiver relays (not comlink relays). Interception of transceiver messages are automatically hardened to **Hard** (◆◆◆). *When compared to the cost of upgrading a vehicle's range via attachment to this range, the original 1,000 credit price was way too cheap and instead transferred to the Medium-Range Transceiver.*

Price: 2,000 ⧐
Encumbrance: 5
Rarity: 3
Source: Suns of Fortune (p. 100)

PORTABLE TRANSCEIVER RELAY *clarification only*

A small transceiver relay that can automatically intercept and relay a high volume of transceiver messages to other transceivers or transceiver relay stations within Medium range (25 light years).

Price: 75,000 ⧐
Encumbrance: 15
Rarity: 7
Source: Far Horizons (p. 45)

COM JAMMER *clarification only*

Must be attached to a comm device. The com jammer adds difficulty to any comms interception within range from ◆ for a Close range comm with com jammer attached through ◆◆◆◆◆ for an Extreme range comm with com jammer attached. This base difficulty is added to the interception at Close range. Reduce by 1 for each range beyond Close up to the comm's range. Only jams like signals (comlink or transceiver). Causes Boosted Emissions.

Price: 400 ⧐
Encumbrance: 4
Rarity: 3
Source: Core (p. E 178, A 194)

COM SCRAMBLER   *clarification only*

Scrambles a message adding ■■ to any interception attempt. This is cumulative with any other interference. May be added to any comm device. Note that scrambling may even be added to a simple default check causing a comms check of **Simple (■■) Computers**.
Price: 1,000 ⚡
Encumbrance: 4
Rarity: 3
Source: Core (p. E 187, A 194)

ENCRYPTION MODULE   *change*

Attached to a comlink (only). Any decoding attempts against messages sent by the comlink are upgraded.
Price: 1,250 ⚡
Encumbrance: 3
Rarity: (R) 6
Source: Suns of Fortune (p. 100)

VEHICLE ATTACHMENTS

UPGRADED COMMS ARRAY   *clarification & small addition*

Base Modifiers: Increases the range of shipboard communications by 1 range band. Extreme is maximum range. *Requires Silhouette 4+ to obtain Extreme.*
Modification Options: 2 One additional range band Mods.
Hard Points Required: 1
Price/Rarity: 4,800 ⚡ /6
Source: Core (p. A 287, F 271)

ADVANCED SUBSPACE ENCRYPTION ARRAY   *clarification only*

Base Modifiers: Any interception or decoding attempts against messages sent by the array are upgraded. Applies to transceiver messages only.
Modification Options: 2 add ■ to interception attempts, 2 add ■ to decoding attempts.
Hard Points Required: 1
Price/Rarity: (R) 6,000 ⚡ /7
Source: Desperate Allies (p. 65)

A transceiver message, **Hard (◆◆◆) Computers** to intercept by default, which has been encoded to **Daunting (◆◆◆◆) Computers** is sent by a non-modified Encryption Array. Potential enemy recipients would require **Hard (◆◆⬢) Computers** to intercept the message and **Daunting (◆◆◆⬢) Computers** to decode it.

HOLONET PIRATE ARRAY *clarification & change*

Base Modifiers: A Long ranged transceiver that may be modified to allow stealthy access to a transceiver network such as the Holonet. *Range of vehicle comms extended to Long. Adds ▢ ▢ to attempts to Piggyback a message. Other bonuses are granted only with modifications.*

Modification Options: 2 add ▢ to intercepting Mods and 2 add ▪ to attempts to intercept its own traffic Mods.

Hard Points Required: 2

Price/Rarity: (R) 25,000 ⚡ /8

Source: Desperate Allies (p. 65)

> A YT-1300 has comms of Short range. Adding the pirate array extends comms instantly to Long range and Piggybacking attempts receive ▢▢. Next, modifications are granted to add ▢▢ to intercepting and ▪ to interception of the YT-1300's messages. The YT-1300 can now attempt to pick up transceiver messages from the Holonet (always upgraded, see above) with **Hard (◆◆⬤▢▢) Computers**. The extra bonus will help offset the danger. When sending its own messages, any interception attempts will have to contend

SENSOR RULES

Rules regarding use of sensors in the Core books are sparse. More detailed rules allow for cat & mouse tactics or assist in exploration attempts when needed. However, a referee shouldn't being calling for a sensor check each time the players arrive in a well traveled star system. Reserve their use for exploring a new location or when something is amiss.
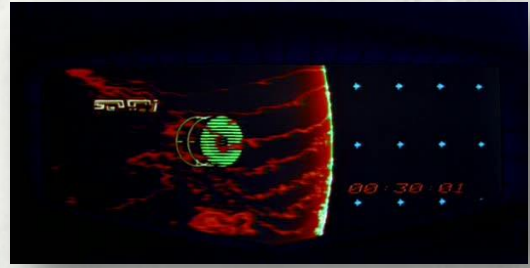
SCAN MODES

Sensor stations may be operated in two modes, each with advantages and disadvantages: **Passive** and **Active**.

Sensors in **passive mode** are just looking. There is no emission from the sensor station. Sensors are looking for radiated signatures of potential targets with heat and gravity changes being the most common. Passive sensors can also involve just looking with the assistance of advanced telescopic and digital enhancement. Thus, passive sensors may pick up certain large objects at extreme distances when compared to active sensors.

> **Passive Sensors:**
>
> - Performs System Scans or any Scans versus targets with Boosted Emissions at Stellar Scale (to a maximum of Short range).
> - Perception check.
> - Referee may allow a Vigilance check if the sensor station is manned even though no one has declared a sensors check. Does not pick up extra details.

Sensors in **active mode** are emitting strong signals in an attempt to bounce them off an object. This active signal is combined with a few of the passive methods while in active mode. With a wide range of sensors being used, an active sensor scan is thus much better at picking up details. But, this comes with a cost. Transmission of the active "radar" signal makes it easier for others to locate the active sensor station. Active sensors only scan in one specific direction. They are limited to one arc during each check.

> **Active Sensors:**
>
> - Causes Low Emissions when used.
> - 1 automatic ☼.
> - Computer check.
> - Attacks against detected targets (by the detecting vehicle only) receive ▢ as long as the target stays in range and active sensors are kept on.
> - One arc, +1 range.

SCAN CHECKS

The base check to detect an object using sensors uses Computers, Perception, or Vigilance. **Computers** is used if a person is actively searching using a sensor station Active mode. **Perception** is used if peering at a sensor station's monitor attempting to notice something in Passive mode. **Vigilance** may be requested by the referee if no one was actively attempting a check, but the station was conceivably manned in passive mode (only). This could represent a crew member picking up something during their routine operations and most often is an Object Scan. Vigilance attempts may not benefit from extra details provided by extra ✷ (see below). You noticed something on the sensor monitor nearby, but you will need to sit down and check again to look for details.

Both Vigilance and Perception checks add one ◆. Nothing replaces a skilled sensor operator.

It's suggested the "Unknown Results" method in the sidebar be used for sensor checks to keep the players guessing.

Checks may be repeated, but a referee may put a limit on this depending on the situation. Repeated scanning for new targets in combat is reasonable. Repeated rolling with no changes in the situation may be disallowed. But, any tweak to the event makes it reasonable to scan again. Perhaps a Vigilance roll picked up a spacecraft, but no details were discerned. A sensor operator decides to take a look using Passive mode using Computers. The check doesn't reveal any further details, so he tries again this time using Active mode to light up the target. That's three rolls in a row, but not unreasonable.

The amount of net ✷ generated on a roll is important. A basic success gives only general information while extra successes may provide more details.

Automatic Simple checks: Default sensor scans of any type begin at Simple difficulty (see *Scan Types* below) and thus can be considered automatic. If no setback or difficulty dice are added to this check, the player may choose to not roll and instead receive an automatic success. This gives only general details as if the roll netted one ✷.

UNKNOWN & VARIED

For many sensor checks, it is suggested to use variations on the standard roll including Unknown and Varied Targets.

Unknown: Use when the players don't really know if something is out there or not. Referee rolls all "bad" dice, difficulty and setback, behind a screen.

Varied Targets: Use when there are multiple objects within sensor range. Should be combined with Unknown. Roll versus the easiest target and resolve. Without picking up the dice, add difficulty or setback for the next harder target and resolve. Repeat until all potential targets are resolved.

PLANETARY (SPACE) SCALE

Close: Engaged. Dogfight range.

Short: Nearby (relatively) in space.

Medium: Orbital distance.

Long: Safe jump distance.

Extreme: Edge of contact.

SCAN TYPES

There are three types of scans, each requiring a different check, depending on what the sensor operator is looking for: **System**, **Planetary**, and **Object**.

SYSTEM SCANS sweep with long-ranged passive sensors to pick up planetary objects (planets, moons, large asteroids).

Mode: Passive only.
Scale: Stellar, but maximum of Short range.
Check: **Simple (–) Perception** or **Easy (♦) Vigilance (when allowed)**.
Reveals: Planetary objects within range including their general type (airless, desert, water, garden, etc) and orbital patterns. Extra ✹ may provide more details (unless using Vigilance).

PLANETARY SCANS analyze a planetary object to pick up details.

Mode: Passive or Active.
Scale: Planetary (space), but can't be closer than Medium (orbital) in order to properly analyze the entire planet.
Check: **Simple (–) Computers** or **Easy(♦) Perception**.
Reveals: General type (desert, water, garden, rock, etc), atmosphere, rotational pattern. Extra ✹ may provide more details (unless using Vigilance).

PUBLIC LOGS

Locations of many planets and settlements are common knowledge or readily available with a check of a database. A starship may not be able to detect all of the planets in a system, but known planets and their current location can easily be looked up in the ship's astrogation computer. Likewise, if you are traveling across Tattooine in an airspeeder, you don't need to use sensors to find Anchorhead. Its location is commonly known, it's marked on the speeder's navigation map, and beacons light the way. Thus, the referee should allow players to know the locations of known planetary bodies, orbital stations, and settlements. Save the sensor checks for such situations as entering a fringe system, looking for a secret base, or landing upon an unexplored planet.

OBJECT SCANS look for any non-planetary objects such as vehicles, beings, or settlements.

Mode: Passive or Active.
Scale: Planetary (space or ground).
Check: Simple (–) Computers. (♦) Perception or **Vigilance** (when allowed).
Reveals (vehicles): Vehicle type (transport, starfighter, airspeeder, etc),Silhouette, vector.
 (beings): Bipedal, quadruped, etc. Silhouette.
 (settlements): General size (village, town, city, metropolis) and architectural nature.

Extra ✹ may provide more details (unless using Vigilance). Varied Targets check method suggested (see "Unknown & Varied" on preceding page).

SCAN CONDITIONS

Several conditions may affect the basic sensor scan check.

Low Emissions: Condition caused by several actions of the target: 1) current Speed 4+, 2) used the Punch It maneuver within the last turn, 3) having Active Sensors "on", or 4) the craft has created a Hyperwave (entering or leaving hyperspace). Most settlements are also considered having at least Low Emissions unless they have taken appropriate precautions. Low Emissions give ▯▯ to any passive sensor checks to detect the target. Not stackable.

Boosted Emissions: Caused by actions of the target such as com jamming, sensor jamming, or having a beacon on. Large settlements are almost always considered to have Boosted Emissions. Such emissions give ▯▯▯ to any passive sensor checks to detect the target and the sensor may use Stellar scale if within space, only. Not stackable.

Previously Detected: Once a target has been detected, it will remain so until contact is somehow broken. A previously detected in-contact target gives an automatic ✷ to another sensor check against it.

Interference: For jamming, see below. Terrain, atmospheric, and electrical disturbances, can produce ■ to the sensor check. Their strength in ■ is up to the referee.

Blacked Out: A vehicle, small station, or small settlement with only life support running. Shields, engines, comms, active sensors, and weapons are completely powered down and require a Maneuver per 2 silhouette to power back up. Vehicles moving over Speed 3 or with a Silhouette of 7 or greater may not be Blacked Out. In vacuum, any previous Speed is retained when Blacked Out, but no course corrections may be made. A ship's transponder is off since the sublight engines are shut down. A Blacked Out target increases passive sensor checks against it by ◆◆. Can't be stacked with Running Quiet or a cloaking device.

Running Quiet: Running Quiet is not as critical as being Blacked Out. Only shields and active sensors are powered down (Manuever to power down or up). Top Speed is only 1, but course corrections may be made. Running Quiet adds ◆ to any passive sensor checks against the target. Can't be stacked with Blacked Out or a cloaking device.

Object Signature: Size makes a difference against both active and passive sensors. It's easier to locate a Star Destroyer than a lost pilot floating in space. See *Table 2: Object Signatures*:

Table 2: OBJECT SIGNATURES			
Signature	**Vehicle Silhouette**	**Examples**	**Adjustment**
Massive	8+	Large settlements, large capital ships or stations.	-◆
Large	6-7	Average capital ships, small settlements, large buildings.	▯
Medium	3-5	Medium vehicles, medium buildings, a very small village.	-
Small	1-2	Small vehicles, small buildings.	■
Tiny	NA	People, large gear.	+◆
Miniscule	NA	Small gear.	+◆◆

SCAN RESULTS

A basic sensor check success gives general information of the target such as silhouette/size, general type, speed, and distance. This allows for basic targeting, but you may not know what you are shooting at. Extra successes will grant the sensor operator more information. The total number of successes determines how much is learned about the target: ✯ gives general type, ✯✯ details such as model, ✯✯✯ exact specifics. See *Table 3: Sensor Success Results* below and *Table 4: Spending Sensor Results* on the next page for suggestions on spending dice results and details given for various targets.

If the sensor check involved Vigilance, only the information from a general success will be provided. No one was actively manning the sensor station. But, after discovering the object, a sensor operator could sit down and try again.

| Table 3: SENSOR SUCCESS RESULTS			
Scan Type	**General ✯**	**Details ✯✯**	**Specifics ✯✯✯**
SYSTEM	Planets including their general type and orbital patterns.	Moons, asteroid fields.	Individual large asteroids, very large space stations.
PLANETARY	General type (gas giant, desert, water, garden, rock, etc), atmosphere, rotational pattern.	Mapping of land masses, oceans, large lakes, large forests, mountain chains, metropolises.	Locations of large settlements, large bases, large geographical features (volcanoes, large valleys, etc).
OBJECT (Vehicle)	Vehicle type (transport, starfighter, airspeeder, etc), Silhouette, vector.	Model (YT-1300, X-wing), large markings (which may reveal affiliation).	Armaments, Speed rating, hyperdrive capability, etc. If emitting a hyperwave, reveals jump target or source.
OBJECT (Being)	Bipedal, quadruped, etc. Silhouette.	Race, gender.	Armaments, armor, large gear carried. Specific person if known.
OBJECT (Settlement)	General size (village, town, city, metropolis) and architectural nature.	Estimated population and technology level.	Armaments, defenses, location of key buildings.

Table 4: SPENDING SENSOR RESULTS	
Cost	**Options**
✸	Character recovers 1 Strain. Add 🟦 to next allies' sensor check regarding the same target(s).
✸✸	On a success versus a vehicle, learns its current ST and HT levels. Free Maneuver, but can't exceed 2 Maneuvers per turn limit. Add 🟦 to your next sensor check regarding the same target. A minor but not vastly important detail is noted: the PC recalls the planet was mentioned on the Holonet recently, the vehicle has a certain attachment, the person has a limp, etc.
✦ or ✸✸✸	Downgrade the difficulty of your next sensor check. An important detail is noted not normally revealed with successes: the vehicle appears to be damaged, one of the bounty hunters being scanned is actually the rebel operative, the barren planet is unstable, etc.
✦	Upgrade your next sensor check. Receive a net ✶ for a different type of scan (for example, Object when doing a Planetary scan). Potential target must in range for its scan type.
✧	Vehicle suffers 1 System Strain. Character suffers 1 Strain.
✧✧	Sensor station suffers ■ on the next check involving it. Character suffers ■ on his next check.
✧✧✧ or ▼	On a success, glitch in sensor reading causes one detail revealed to be false.
▼	Sensor overloads and receives Minor damage. Sensor accidentally set on Active instead of Passive.
▼▼	Sensor overloads and receives Major damage. Beacon setting accidentally tripped and begins blaring.
Additional ✶	✶ gives General info, ✶✶ gives Details, ✶✶✶ gives Specifics. See *Table 4: Sensor Success Results*.

Extended Sensor Example:

The modified scout ship *Amundsen* enters the edge of an uncharted system. Before proceeding, a System scan using **Simple (–) Perception** is performed using the Amundsen's Long range passive sensors at Stellar range (reduced to a maximum of Short range for System scans, but still reaching far enough to look at the entire system). A net of ✸✸ on the check results in not only revealing two planets (a gas giant and a barren rock) but the fact that the gas giant has several moons and a comet is caught in an outer system orbit. Choosing to look closer at the moons, the *Amundsen* travels to the gas giant. Upon arrival in orbit, the scout ship begins making passive Planetary scans of the gas giant and moon at Medium Planetary (space) range using **Easy (◆) Perception**. An outstanding check of net ✸✸✸ on one of the moons not only reveals it is forested with an atmosphere, but a very large ruin is spotted upon the surface. Intrigued, the *Amundsen's* crew decides to set down nearby the ruins. Upon landing, a passive Object scan at Planetary (ground) scale is attempted. The referee decides to add mystery; he will roll the "bad" dice of the **Easy (◆) Perception** check behind a screen. The referee knows what is out there and instead rolls a challenge die for the beings (Tiny signatures, upgrade difficulty) lurking in the jungle. The player's dice show ✸✸ while the referee glances at his challenge die showing ▼▼ (a net failure) and announces nothing is noted within Long range at Planetary (ground) scale. The crew believes all is well as they set off excitedly through the dark jungle upon their speeder bikes…
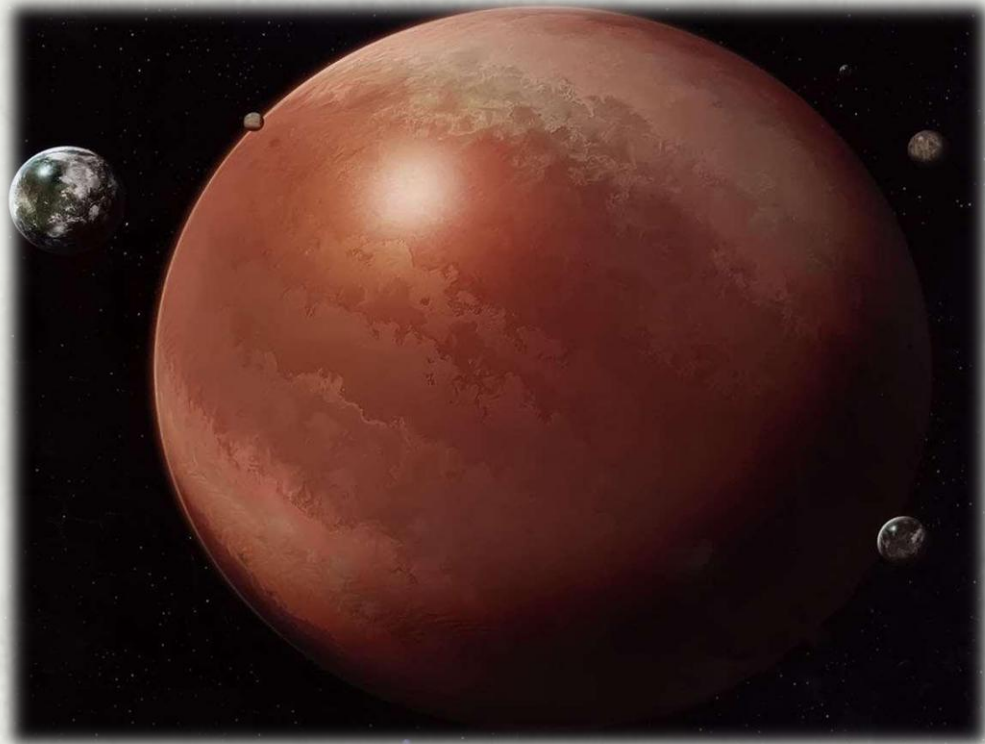
SENSOR EQUIPMENT

A list of related sensor gear and attachments from various sources is below. A few changes are suggested and noted in *italics*.

GEAR

SENSOR JAMMER   *new*

A portable sensor jammer. This is a standalone device that does not need to be mated with a sensor. The device is similar to an ECM suite, but much less powerful. It's range is greatly reduced and thus typically used to cloak an outpost or limited to planetary combat. A Sensor Jammer adds ■■ to all sensor attempts within Medium Planetary range when flipped on. But, the jammer causes Boosted Emissions for attempts against itself.

Price: 650 ⅂
Encumbrance: 4
Rarity: 4
Source: New

SENSOR DECOY   *new*

A large decoy that may be jettisoned from a vehicle and programmed to emit holographic and radiated signatures that can mimic up to a silhouette 5 vehicle. The decoy has a single use repulsor/sublight engine that allows it to achieve Speed 3 for approximately 10 minutes in an atmosphere and up to an hour in space. The device may only fool passive sensors. Successful active sensors will reveal what it is. The decoy will have a signature equal to that of the silhouette it is mimicking. It can be programmed to have Low Emissions to make it more noticeable if desired. Passive sensors will be able to reveal what it is only with a "specific" success roll (✹✹✹). Captains are known to eject such a decoy then immediately Black Out in an attempt for an enemy to follow the decoy which can be programmed to a basic route. Pirates (and conversely anti-pirate patrols) have also been known to use a decoy as bait.

Price: 2,000 ⅂
Encumbrance: 25
Rarity: (R) 7
Source: New

MULTIPURPOSE SENSOR SUITE   *change*

This sensor suite is capable of Long ranged active and passive scans just as a vehicle's sensors. *This gear was modified to bring it in line with vehicle sensors. The restricted rating was also removed since a vehicle's sensors can do the same thing (and aren't restricted).*

Price: 2,750 ⅂
Encumbrance: 25
Rarity: 5
Source: Lead by Example (p. 46)

VEHICLE ATTACHMENTS

SURVEY ARRAY *new*

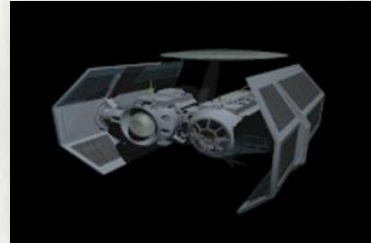Extended array and geological computer for surveying new planets and systems.

Base Modifiers: Generate automatic ✸ when performing System and Planetary scans (only).
Modification Options: 1 additional automatic ✸ Mod.
Hard Points Required: 1
Price/Rarity: 3,500 ⚡ /5
Source: New

RECONNAISSANCE SUITE *slight change & adaption into an attachment*

The description of the reconnaissance suite on page 50 of *Lead by Example* was missing any game statistics. The Sensor Suite rules found in later pages in a reconnaissance frigate seemed to fit.

Base Modifiers: Upgrade any sensor *or comms* checks.
Modification Options: None
Hard Points Required: 1
Price/Rarity: 5,000 ⚡ /6
Source: Lead by Example (p. 50, 54)

NIGHTSHADOW COATING *clarification & slight change*

Base Modifiers: Reduces the range band of enemy ship's sensors (*all types*) by 1 (to a minimum of Close range) for detecting the coated vehicle. Can't be stacked with a cloaking device.
Modification Options: 1 Reduce the ship's silhouette by 1 in combat Mod.
Hard Points Required: 1
Price/Rarity: (R) 3,500 ⚡ /8
Source: Fly Casual (p. 63)

WHISPERTHRUST ENGINE *clarification & slight change*

Base Modifiers: +◆◆ to detect using *passive sensors only* if speed kept to 3 or lower. Can't be stacked with Blacked Out, Running Quiet, or a cloaking device.
Modification Options: None
Hard Points Required: 1
Price/Rarity: (R) 7,500 ⚡ /7
Source: Fly Casual (p. 63)

PSEUDO CLOAKING DEVICE   *change*

The latest cloaking device significantly changed to bring it in sync with the rules introduced with the other two released cloaking devices. The "pseudo" version is not as effective as true cloaking devices, but is much cheaper, doesn't hinder movement, and doesn't require rerouting of power.

Base Modifiers: +◆ to any sensor checks versus, but only at Short range or longer. Can't be stacked with Blacked Out, Running Quiet, Whisperthrust Engine, or another cloaking device.
Modification Options: None
Hard Points Required: 1
Price/Rarity: (R) 12,000 ⚡ /8
Source: Special Modifications (p. 66)

GIMMELLIAN CLOAKING DEVICE   *change & adaption into an attachment*

The Gimmellian Stealth Device from Strongholds of Resistance adapted into an attachment. While referred to as an old cloaking device, it was very weak (see Whisperthrust Engine for comparison to Strongholds of Resistance version of this device) and its ability was completely different than the improved Stygium Cloaking Device.

Base Modifiers: +◆◆ to any sensor checks versus, but maximum speed is reduced by 3 (to a minimum of 1). In order to function, all power from shields and weapons must be channeled into the cloaking device. Rerouting power takes one action. Can't be stacked with Blacked Out, Running Quiet, Whisperthrust Engine, or another cloaking device.
Modification Options: None
Hard Points Required: 1
Price/Rarity: (R) 50,000 ⚡ /9
Source: Strongholds of Resistance (p. 118)

STYGIUM CLOAKING DEVICE   *clarification & adaption into an attachment*

The Stygium Cloaking Device from *Stay on Target* adapted into an attachment.

Base Modifiers: +◆◆◆◆ to any sensor checks versus, but maximum speed is reduced by 3 (to a minimum of 1). Can't use active sensors, comms, or weapons while active. Maneuver to activate or turn off. Can't be stacked with Blacked Out, Running Quiet, Whisperthrust Engine, or another cloaking device.
Modification Options: None
Hard Points Required: 1
Price/Rarity: (R) 250,000 ⚡ /10
Source: Stay on Target (p. 60)

ELECTRONIC COUNTERMEASURES SUITE   *clarification & slight change*

Base Modifiers: Interferes with all sensor checks within the *vehicle's Planetary sensor range. The interference may be limited to one arc for a +1 range boost.* Any sensor within the jamming area or any sensor looking into the jamming area will be jammed. While being jammed, any sensor attempts are limited to Short Planetary range using passive sensors upgraded twice. Also reduces jamming vehicle's silhouette by 1. The presence of the jamming is automatically known within stellar sensor range, but the exact source needs to be detected as above (albeit with Boosted Emissions for jamming).

Modification Options: 1 increase difficulty by 1 when making subsequent attacks with the Guided quality Mod.
Hard Points Required: 1
Price/Rarity: 3,000 ⚡ /6
Source: Core (p. E 269, A 286, F 269)
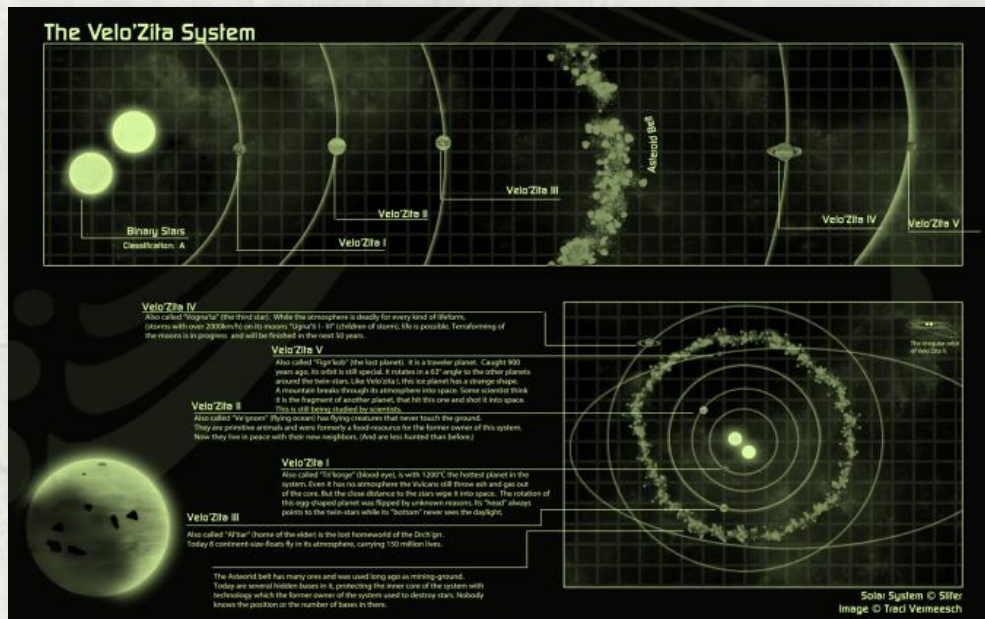
ELECTRONIC COUNTER-COUNTERMEASURES SUITE

Base Modifiers: May make a **Hard (◆◆◆) Computers** check to cancel all effects of an Electronic Countermeasures Suite.
Modification Options: 1 Decrease the difficulty of the Computers check by 1 Mod.
Hard Points Required: 1
Price/Rarity: 3,500 ⚡ /6
Source: Lead by Example (p. 59)

TRANSPONDERS

Every space-going vessel is fitted with a transponder mated with the ship's comms that broadcasts a signal with pertinent identification information (registry, hull number, ownership, etc). Obviously, this signal could be used by potential enemies to locate the vehicle. Thus, Imperial law allows it to be turned down to its weakest setting that allows it to only be picked up at Close range at the Planetary scale without suffering any emissions. This is the default setting for nearly all ship captains. However, if needed, the transponder signal may be boosted up to the limits of the vehicle's comms. This is typically done in an emergency when the transponder is used as a **beacon**. Turning up the transponder boosts the signal to Stellar scale up to the maximum range of the vehicle's comms. This also makes the vehicle produce Boosted Emissions and thus is very easy to locate at extended ranges.