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Support the
latest
firmware
ver. 2.0

Canon EOS-1D^X

AF Setting Guidebook

Detailed explanations of how to master high-performance
AF features to capture that perfect moment



EOS-1D X

AF Setting Guidebook

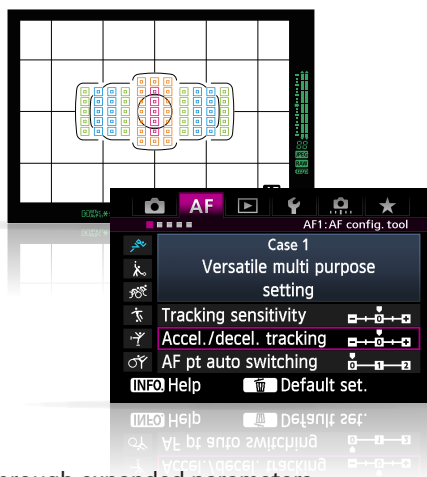
By combining the ultimate in AF performance and ease of use, a wealth of new photographic possibilities are available.



AF Custom Guide Functions that Controls 61-Point High-Density Reticular AF

Make use of high-performance 61-point AF at effective parameter settings to match the shooting conditions or subject.

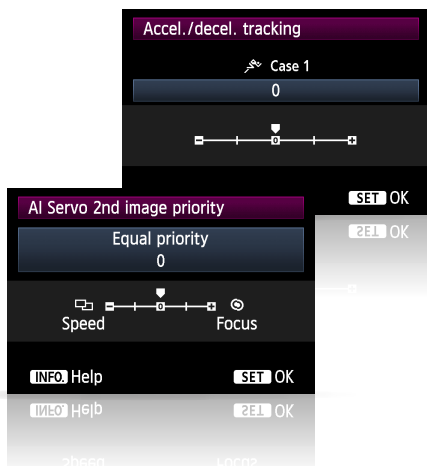
The EOS-1D X is equipped with a newly developed 61-Point High-Density Reticular AF. By arranging the 61 AF points in a dense concentration, the level of freedom in composition and tracking performance of quick moving subjects is improved. A totally new focusing method, AI Servo AF III, ensures superb focus-tracking on many types of moving subjects. You can also effectively set AI Servo AF features using the AF Configuration Tool. Because you can choose from six different preset "Cases," optimized settings are always quick and easy, without requiring adjustments of individual parameters to match the subject or scene.



Firmware V2.0

Support for a wider variety of scenes through expanded parameters and new functions

In the new EOS-1D X firmware Version 2.0, AF performance is even further improved and instant access to AF features is enhanced. AF performance in low-light conditions is improved for the first shot of AI Servo AF, demonstrating its true ability when shooting subjects in dark locations. Additionally, this version incorporates numerous helpful features that assist in shooting moving subjects, such as newly added choices to deal with changes in subject speed, and additional functions to allow instant changes in AF settings at the push of a button. This AF Setting Guidebook introduces the EOS-1D X's high-performance AF features, including those introduced with firmware V2.0 for the EOS-1D X.





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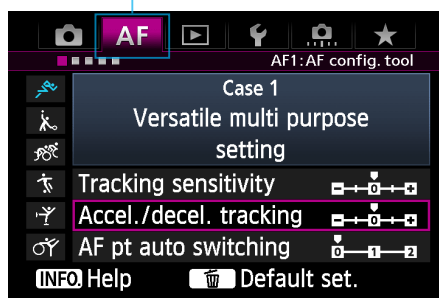
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All AF-related menu functions now in a separate menu

The Various AF-related functions are now incorporated into an AF menu tab



AF-related setting items
in the AF menu



The AF1 tab displays the AF Configuration Tool

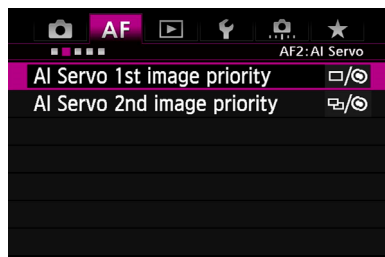
The AF1 tab is important when shooting moving subjects using the AI Servo AF of the EOS-1D X. It's possible to effectively set AI Servo AF characteristics by selecting the option that closely matches the scene with the AF Configuration Tool.

The EOS-1D X puts various AF-related settings that were previously spread out in the custom functions (C.Fn) menu in one place — the new AF menu tab. This makes access to AF-related settings much easier. In particular, the AF Configuration Tool in menu tab **[AF1]** can be used to easily tailor the camera's AI Servo AF characteristics to anticipate subject movement, taking full advantage of the advanced AF performance on the EOS-1D X. Six presets (Case

1-Case 6) make it possible to set the AI Servo AF characteristics to most accurately suit both movement and scene conditions. It's also possible to fine-tune individual parameters, if desired. (Refer to P. 6–27 for AF Configuration Tool details.)

Menu tabs **[AF 2]** – **[AF 5]** include a variety of settings such as shutter release timing settings, the number of AF points that can be selected and AF area selection method.

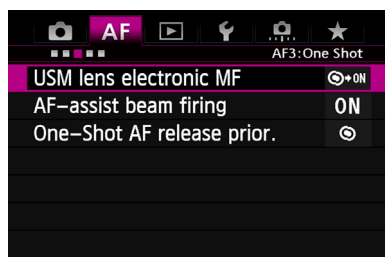
Various settings for AF-related features can be made with AF menus [AF2] – [AF5]



AF2: AI Servo

Settings related to shutter timing and speed when tracking moving subjects with AI Servo AF

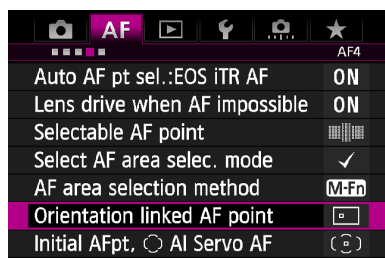
The **[AF2]** tab includes settings related to camera's priority concerning shutter release timing when using AI Servo AF. **[AI Servo 1st image priority]** and **[AI Servo 2nd image priority]** make it possible to make focusing the priority, slowing the drive speed if necessary or prioritizing faster continuous frame rates.



AF3: One-Shot

Settings related to focusing and shutter release timing when using One-Shot AF

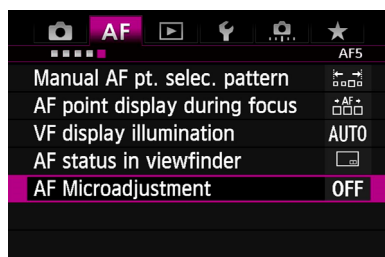
Within the **[AF3]** tab, the **[One-Shot AF release priority]** lets users change shutter release timing when shooting non-moving subjects. The other options **[USM lens electronic MF]** and **[AF-assist beam firing]** control the manual focus operation of select lenses with electronic manual focus, and the operation of AF assist beam of attached Speedlites.



AF4

Settings related to AF point selection

Select which and how AF points are selected. This menu includes settings related to **[AF area selection mode]** (**[Automatic AF point selection criteria]**, **[Selectable AF points]**, **[AF area selection mode]**, **[AF area selection method]** and **[Orientation linked AF point]**). In addition, there is the **[Lens drive when AF impossible]** option in this menu.



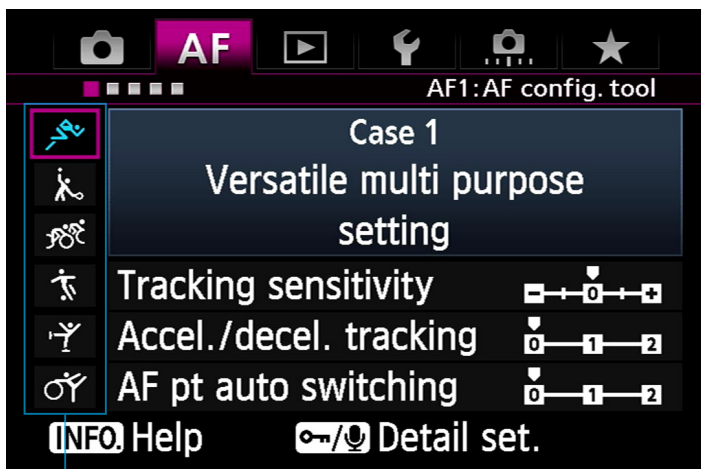
AF5

Settings related to display of AF points, etc.

Within **[AF5]** tab are settings that control how AF points are displayed in the viewfinder, such as **[AF point display during focusing]**, **[VF display illumination]** and **[AF status in viewfinder]**. With **[Manual AF pt. select pattern]**, the AF point selection can stop at the end of a row or, instead, loop back to the opposite side of the AF area. For those who need to make fine focus adjustments, **[AF Micro-adjustment]** is available.

Optimize AI Servo AF for the type of subject movement

Six preset options for different situations, with further ability to fine-tune if desired



[AF1] tab screen: **The AF Configuration Tool.** By selecting an appropriate preset from the Case 1-Case 6 icons on the left side of the screen, the most effective AI Servo AF settings for different subjects can be made.



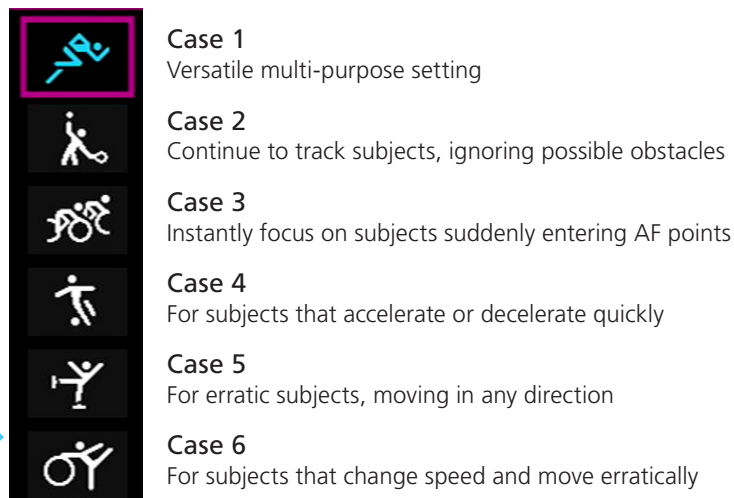
The AF Configuration Tool is a function for setting AI Servo AF characteristics. Therefore, its settings will have no effect when using **[One shot AF]**.

When the **[AF1]** tab on the EOS-1D X is opened, **[Case 1: Versatile multi-purpose setting]** a running man icon will be displayed. This is the default option for the AF Configuration Tool. Different presets to match the characteristics of the type of subject and its movement, and the shooting conditions, can be selected from Case 1-Case 6. By simply selecting one of these cases, AI Servo AF characteristics are changed and optimized to match different types of movement.

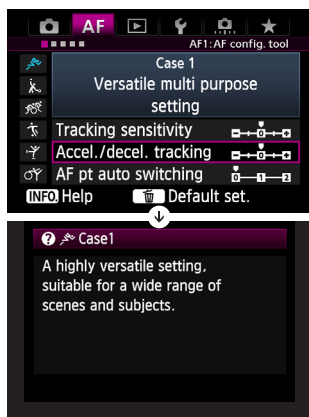
These six presets are combinations of the following three parameters: **[Tracking sensitivity]**, **[Accel./decel. tracking]**, and **[AF pt auto switching]** (P. 20–27). Selecting a Case sets the parameters in the most effective way. However, if you wish, it is also possible to manually adjust each parameter individually.

Important to note: the six cases in the AF Configuration Tool only affect focus-tracking in AI Servo AF — there's no impact in One-Shot AF.

The AF Configuration Tool: Six preset options to tune AI Servo AF for specific types of subject movement and shooting conditions



The most advanced Canon AF system to date allows EOS-1D X users to optimize AI Servo AF for different conditions and subjects. By selecting the appropriate icon and Case, photographers can change and fine-tune AI Servo AF for incredible continuous AF, even with the most challenging action subjects.



Press the
INFO.
button

Content
displays on
the help
screen

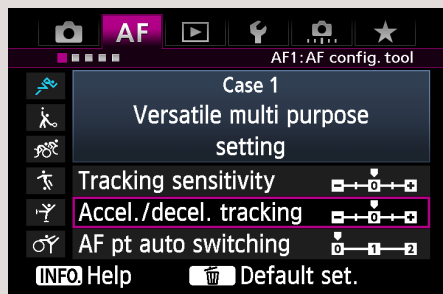
Hints & Tips

Push the **INFO.** button, while any of [Case] is indicated in the AF menu, and an explanation of that setting is shown on the LCD monitor.

Moving the purple square over Case 1-Case 6 will display the name of each case, for example [**Case1 Versatile multi-purpose setting**]. If you want more detailed information, you can press the INFO button. This will display the help screen, containing straightforward information about what the setting does and circumstances in which it could be best applied.

Precise and accurate focusing for a wide range of subjects

The starting point for AI Servo AF: a versatile, multi-purpose setting



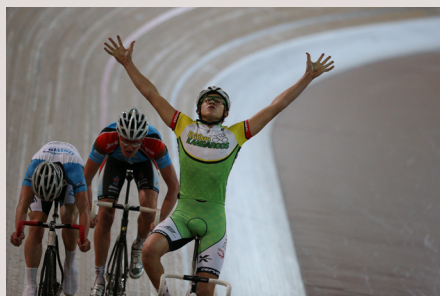
Parameter default settings

• Subject tracking sensitivity	[0]
• Accelerate / decelerate Tracking	[0]
• AF point auto switching	[0]

Case 1 is the basic AI Servo AF setting on the EOS-1D X. As its name suggests, it is versatile and achieves a high level of tracking performance in a wide variety of scenes.

Equipped with AI Servo AF III, the EOS-1D X has improved flexibility in handling a variety of moving subjects and superior prediction of movement for more accurate focusing. Even with a variety of difficult elements such as extremely fast movement, sudden changes in speed and interruptions by obstacles, AI Servo AF III overcomes these and is able to capture the subject.

Case 1 is the recommended starting point for tracking moving subjects, especially those moving at a steady speed. For more challenging types of moving subjects, consider Case 2-Case 6, to match shooting conditions.





Case 1 can be used to great advantage when shooting continuously moving subjects, regardless of the speed of their movement.

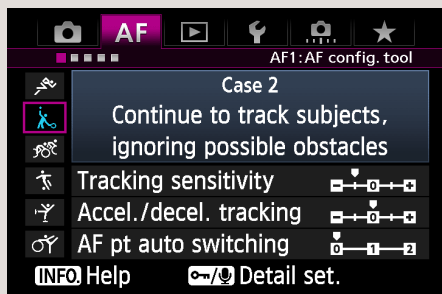
Single-Point

AI Servo AF III makes it possible to carry out precise focus for subjects in a wide variety of conditions

AF on the EOS-1D X is equipped with a new focus tracking algorithm, AI Servo AF III. It supports an even greater variety of subject movement than before. Case 1 should be most users' first option for action shooting. In particular, it's ideally suited for subjects moving continuously toward or away from the camera.

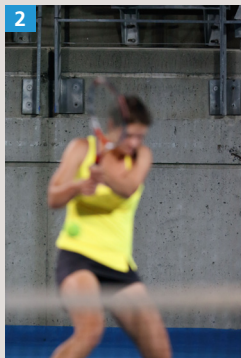
Continue to focus-track even if the subject momentarily

AI Servo AF maintains focus-tracking, even when sudden changes occur



Parameter default settings

• Subject tracking sensitivity	[-1]
• Accelerate / decelerate Tracking	[0]
• AF point auto switching	[0]



Example of a fast moving subject, where the focus has momentarily shifted to the background (photo 2). By selecting Case 2 for situations like this, AF is less likely to be thrown off by sudden changes.

Case 2 is an effective setting for shooting fast moving subjects, which may move away from the selected AF point or when obstacles may momentarily obscure the subject. Sometimes when the subject moves from the selected AF point, focus can shift to the background

(resulting in an out of focus subject). Or, if another subject or obstacle suddenly comes between you and the subject, AF may refocus on the obstacle. By selecting Case 2 in situations like these, the AF system will attempt to continue to track the initial subject. When a

moves from the AF points

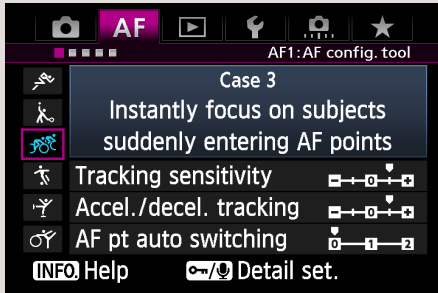


subject moves away from the AF points for an extended period (such as swimmers doing the butterfly stroke or sports where the subject is hidden for intervals), even better performance may be achieved by manually setting the **[Tracking sensitivity]** parameter to **[-2]**.

Try selecting Case 2 when shooting a subject with fast side to side movement. Even if it momentarily moves away from the active AF point, AI Servo AF resists refocusing on the background or any obstacle.

Focus instantly on subjects that move into the AF points

Effective for continuously photographing new moving subjects, one after another



Parameter default settings

• Subject tracking sensitivity	[Responsive: +1]
• Accelerate / decelerate Tracking	[+1]
• AF point auto switching	[0]

Case 3 is the ideal setting when you want the AF system to focus instantly on any new subject within the active AF area. In Case 3, the **[Tracking sensitivity]** parameter is set to **[+1]**. As a result, subjects that come into the AF points will be focused on more quickly. This setting is most effective when subjects appear suddenly in the frame (for example, an alpine skier bursting over a hill and suddenly appearing in your viewfinder). Case 3 can also be extremely effective when you want to instantly switch from one moving subject to another (for example, at the start of a bicycle road race, when you want to shoot continuously and switch from cyclist to cyclist while focusing).

With Case 3, unlike Case 2, if the subject moves away from the AF points, the camera will quickly refocus on a different subject or the background. Therefore, Case 3 is recommended only when you truly want the AF to instantly refocus on new subjects.



2. Focus on the lead cyclist



1. Shoot the whole group while focusing on the cyclist in the center

A scene with cyclists coming towards the camera. While focusing on the lead cyclist, you may wish to switch focus to the other cyclists while continuously shooting. In this situation, Case 3 would allow you to move the active AF point from one cyclist to another and instantly begin to focus-track on the new subject.



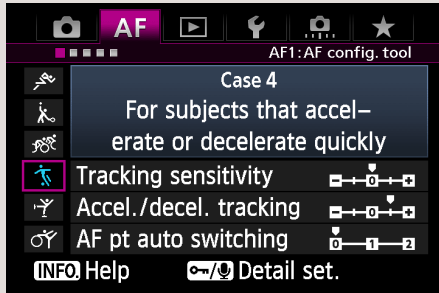
3. Focus on the right side cyclist



4. Focus on the left side cyclist

Focus track subjects that may change speeds rapidly

Optimize AI Servo AF for erratic, stop-and-start movement or changes in subject speed



Parameter default settings

• Subject tracking sensitivity	[0]
• Accelerate / decelerate Tracking	[+1]
• AF point auto switching	[0]

For example, a soccer game. A player dribbling at high speed stops suddenly in front of a defender, changes direction and then begins to sprint again. By using Case 4, the AF system reacts to sudden changes in speed, allowing continuous and accurate focusing.



Continuously track players as they suddenly slow down and speed up



When shooting sports, there are many situations when subjects won't be moving at steady, continuous speeds. Athletes suddenly going from static to moving or quickly stopping can occur in various sports and situations and it

can be challenging for traditional AF systems. In these situations, Case 4 may be most effective. With the **[Accelerate / decelerate Tracking]** parameter set to **[+1]**, the AI Servo AF will work to focus track any changes in speed, including

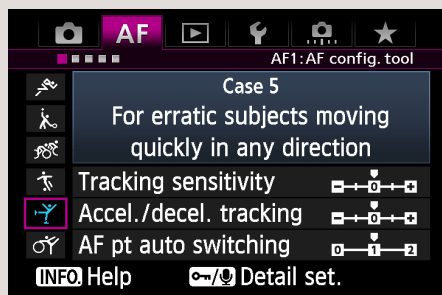


sudden stops and starts. This makes Case 4 an effective setting for shooting events like American football, soccer, rugby, basketball or sports where there is a lot of running, stopping and changes of direction. It's also effective at a

corner during motor sports (sudden deceleration and acceleration) and for many types of wildlife shooting.

Rapid changing of AF points, to follow erratic movement

Takes full advantage of expanded AF Areas, for subjects with quick side-to-side motion



Parameter default settings

• Subject tracking sensitivity	[0]
• Accelerate / decelerate tracking	[0]
• AF point auto switching	[+1]

It is possible to focus on subjects that move erratically and could move in any direction.



Inline skating on a half-pipe. Case 5 allows the camera's AF system to change from one AF point to another one more rapidly, when using AF Point Expansion, Zone AF or Automatic AF point selection mode.

Using Case 5 when photographing a figure skater making a big jump (the AF area selection mode is set to **[AF point expansion]**). Case 5 allows even faster automatic switching from one AF point to another, when an enlarged AF area is being used.



Case 5 is most effective for subjects that can move unpredictably from side to side — when more than one AF point is active. This setting works in 61-point automatic selection AF, Zone AF and AF point expansion modes only. In Case

5, **[AF pt auto switching]** is set to **[+1]**, speeding up the camera's ability to shift from one AF point to another. One of the key benefits of the 61-point AF system is its ability to enlarge the active AF area and Case 5 takes

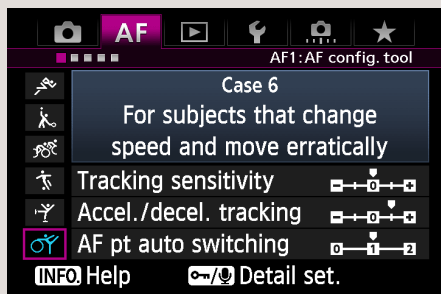


full advantage of this when erratically moving subjects make it difficult to keep a single AF point on the subject. Case 5 is especially effective with subjects that will tend to have relatively consistent movement toward or away

from the camera, but which can be expected to have erratic side-to-side movement: figure skating, skateboarding and various forms of wildlife shooting — especially birds in flight — are possible examples.

Focus on subjects with erratic movement and changes in

Fast switching of AF points and AI Servo AF optimized for acceleration/deceleration



Parameter default settings

• Subject tracking sensitivity	[0]
• Accelerate / decelerate Tracking	[+1]
• AF point auto switching	[+1]

A rhythmic gymnast making sudden big jumps can be captured when shooting with Case 6, which can focus on subjects with both speed changes and erratic movement. Like Case 5, it allows users to take full advantage of the 61-point AF system, to work with a larger active AF area.

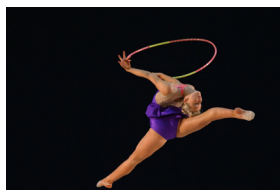
Case 6 combines features of both Case 4 (support for sudden changes in speed) and Case 5 (support for erratic movement in any direction). **[Accel./decel. tracking]** and **[AF pt auto switching]** parameters are both **[+1]**.

Therefore, Case 6 is an effective setting for subjects that stop and start suddenly, but also have erratic side-to-side movement. Like Case 5, its faster AF Point Auto Switching works when the AF Area is set to Auto selection 61-point AF, Zone AF and AF point expansion settings only.

Subjects that are most appropriate for Case 6 include rhythmic gymnastics, where there are often large movements with complete stops, and others.



speed

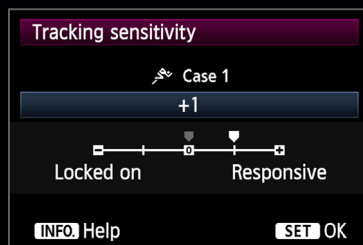
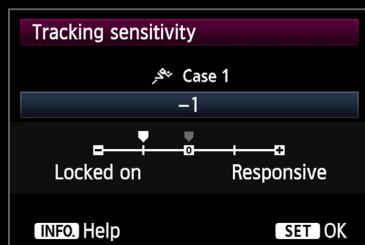


You make the choice: Lock-on and ignore sudden changes

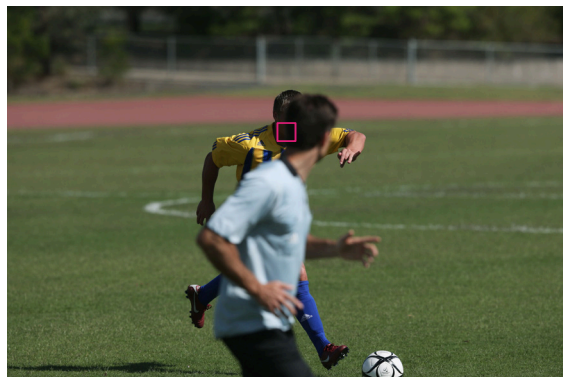
Fine-tune any of the six Cases for more consistent focus-tracking on one subject (even if

[Locked on : -]

[Responsive : +]



Choose any of [Case] and push **OK** button for Tracking sensitivity, then adjust level by pressing **SET** and turning



An example where [Locked on: -2/-1] is more effective

When another player, referee or obstacle appears in front of your original subject, focus can shift to that new subject.

Example when the referee momentarily appears in front of the player being tracked, then the player appears again. With the [Locked on: -1] and especially [-2] setting, AI Servo AF resists refocusing on the obstacle and continues to track your intended subject — the original player.

or quickly refocus on new subjects

obstacles appear) or for instant response when new subjects appear

With the AF Configuration Tool on the EOS-1D X, not only can you select from Case 1-Case 6, but three different aspects of AI Servo AF control for each can be adjusted individually.

[Tracking sensitivity] addresses how quickly the AF system will try to refocus on a new subject when you're focus-tracking an original subject and there's a sudden change.

The **[Locked on: -2/-1]** setting delays AF from switching to a sudden new subject and

continues to focus on the original subject. Selecting **[-2]** results in the targeted subject being tracked for a longer time before focus changes to a new subject now in the AF point.

The **[Responsive: +1/+2]** setting speeds up the process of refocusing on a new subject with AI Servo AF. It's also effective when you want to quickly focus on subjects that are hidden and appear suddenly.



An example where **[Responsive: +1/+2]** is effective

When you want to focus on a subject that will appear suddenly in the frame.

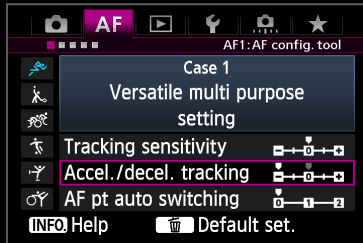
Example where a skateboarder appeared suddenly from the far wall. In a situation like this, setting to **[Responsive: +1/+2]** makes it possible to focus even more quickly on the skater who just appeared. (Photo top left, shown to illustrate scene prior to the skateboarder appearing.)



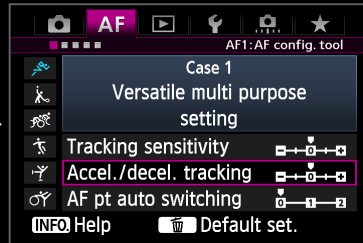
Set AI Servo AF for steady subject movement or

New with firmware v. 2.0: [-1, -2] settings for added stability with subjects

[-2]



[0]



Choose any [Case] and push button for Accel./decel. tracking, then adjust level by pressing SET and turning .



Examples where the new [-] setting can be more effective

Sports with far away subjects that experience relatively minor changes in speed and nearby obstructions that can slightly throw off autofocus. The new [-1] and [-2] Accel./decel. tracking settings will tend to disregard these types of sudden, yet subtle, AF changes and continue tracking the original subject.

for erratic, stop-and-start movement

moving at consistent speeds

[Accel./decel. tracking] is significant: it allows AI Servo AF to be optimized for steady, continuous movement or for more erratic, inconsistent subject speeds. The default setting is [0], which is best for shooting subjects who move at steady speeds or are not likely to experience significant changes in speeds.

[+1/+2] are best for shooting subjects who suddenly start or stop moving, or tend to accelerate or decelerate. This setting enables the camera to continue focusing on the desired subject even when it experiences significant, split second changes in

speed. For example, the camera becomes less likely to focus behind an approaching subject who moves suddenly and less likely to focus in front of a subject when it stops suddenly, which would result in a blurred subject. **[+2]** can handle greater changes in speed than **[+1]**.

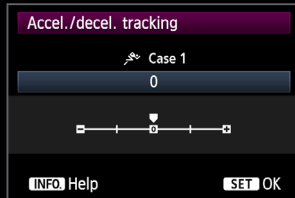
The new **[-1/-2]** offers even more focus stability when shooting steadily moving subjects. In particular, they are ideal for resisting minor but sudden changes in what the focus points "see," if an obstruction occurs near the subject (see below).



[Accel./decel tracking] option **[-1/-2]** are new parameters for shooting in situations where far away subjects experience minor changes in speed and obstructions may pass by **near the subject**. Specifically, this setting is effective for sports with wide playing fields, such as soccer, when you want to capture distant action. In many cases when photographing such a scene, another athlete — near the main subject — can momentarily move in front of your subject, potentially throwing off AF by a small amount. The new **[-1]** and especially **[-2]** settings recognize these sudden but minor changes as unintentional and continue smooth focus-tracking on the original subject. Both new settings also provide more stable AF on continuously moving subjects, even with no distant obstructions. They're also ideal for subjects who move only slightly.

Set tracking for subjects that move or stop suddenly

[+1/+2] is effective for fast sports, which may include sudden stop-start motion



Examples where the [0] setting is effective

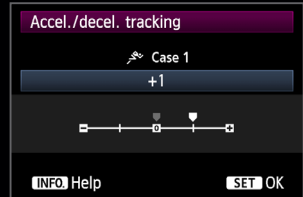
Track and field events where constant speed is common



A track and field example where an athlete is running at a consistent speed. **[0]** is very suitable for subjects moving at a steady, continuous rate of speed — regardless of whether that speed is fast or slow.

Examples where the [+] setting more effective

Sports with sudden stops or starts in subject movement



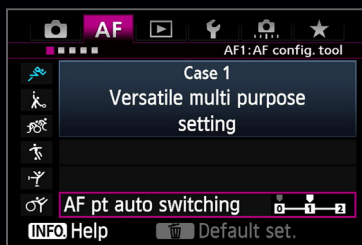
A long jump landing is a perfect example of movement that suddenly comes to a stop. With this sudden change in subject speed, normal AI Servo AF may not be able to perfectly capture it. But, changing **[Accel./decel. tracking]** to **[+1]** or **[+2]** adjusts the camera's AI Servo AF to expect and adjust for sudden speed changes.

When more than one AF point is active: how quickly will [+1/+2] settings speed-up AF system's ability to rapidly change AF points, when multiple

[0]



[+1]



Choose any [Case] and push **OK** button for AF pt auto switching, then adjust level by pressing **SET** and turning **DISP**.

Examples where [0] is most effective: Sports with consistent movement, where it's relatively easy to keep the primary AF point on the subject



Example of a golf bunker shot. The **[0]** setting is recommended when shooting subjects who do not have a lot of side to side, erratic movement.

Tip for AF setting

Change the level of "Accelerate / decelerate Tracking" and "AF point auto switching" as needed for the best possible results — depending on the type of motion.

"Accelerate / decelerate Tracking" and "AF point auto switching" are two fundamental aspects of the 61-point AF system, whenever you've got moving subjects **and** more than one AF point active. Start with the factory default settings, but if you need more focus consistency, understand you can adjust either or both to suit the subject at hand.

the camera switch from one to another?

AF points are being used

The **[AF pt auto switching]** adjusts the speed of AF point switching for subjects with lots of lateral (side to side) movement. This parameter is only for switching between multiple AF points, so it has no effect with AF Area selection modes **[Single-point AF]** or **[Spot AF]**.

The **[0]** setting is a standard setting for smooth, predictable switching of AF points. The **[+1/+2]** settings are used when shooting

subjects with erratic movement, especially side to side. Whenever the initial or primary AF point (again, with more than one AF point active) leaves the subject, it will rapidly switch to surrounding AF points to continue to follow that subject.

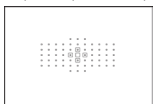
Use the **[+]** setting when you want the camera to speed up the process of switching AF points; the **[0]** setting provides more stable changing of AF points and is ideal for subjects

Examples where [+] is effective: fast moving sports with big movements, where a single AF point could lose the subject easily

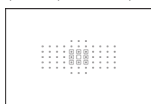


A rhythmic gymnast showing lots of movements in all directions. Use the **[+1]** setting for the AF Point Expansion to more rapidly move from the initial, central AF point to any of the surrounding "assist" points.

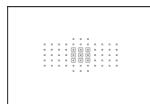
AF point expansion (4-point)



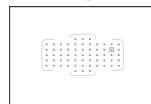
AF point expansion (8-point)



Zone AF



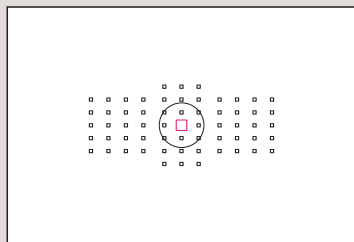
Automatic AF pt. selection



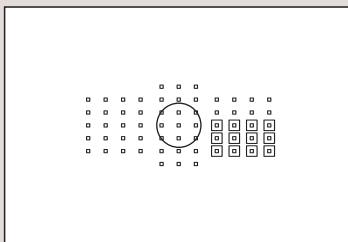
Note that AF point auto switching only occurs when more than one AF point is active, as in the AF Area examples above

AF Area: Leverage the 61-point AF system to change the

Choose whether only one AF point is used, reduce its size for even more precision or



Using only one AF point



Using multiple AF points (Zone AF)

Focus on a broad or precise area of a subject: it's up to you.

AF Area selection modes make it possible to change the size of the area used for AF. Set the selection method of AF points that best matches the subject and shooting conditions.



Press the  button



The mode is changed each time the M-Fn button is pressed

How to set the AF area selection mode

After pressing the  button, each time the M-Fn button is pressed, the **[AF area selection mode]** changes. By setting the menu **[AF4] tab's [AF area selection method]** to **[ -> Main Dial]**, after pressing the  button, you can switch the mode by turning the Main Dial if you prefer.

The EOS-1D X is equipped with 61-point AF. Not only can any of these AF points each be selected individually, but multiple AF points can be combined, and even automatically switch to track subjects if they move left and right across the frame. The **[AF Area selection mode]** allows the selection of these AF point modes.

Two AF Area settings let you manually select a single AF point: **[Single-point AF]** and **[Single-point Spot AF]**. And, four settings can

combine AF points to form a larger AF Area, which is often ideal for moving subjects.

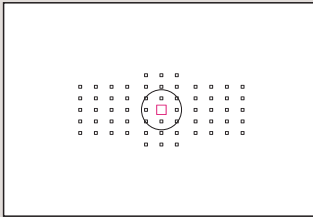
- **AF point expansion (4 points)**
- **AF point expansion (8 points)**
- **Zone AF**
- **Automatic AF point selection**

AF Area features are explained from P. 29~37, so you can select the one best suited to your subject's characteristics and your personal shooting preferences.

size of an AF point

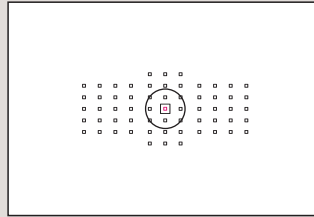
expand it to cover a broader area of the scene

There are six AF Area selection modes to choose from



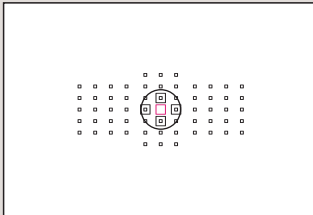
Single-point AF

The default setting. Photographer manually selects any one AF point, for precise focus on a relatively small area of the subject.



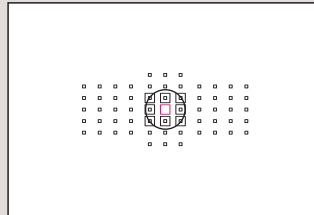
Single-point Spot AF

Size of a single AF point is reduced, so that focus can be on an even smaller part of a subject or scene.



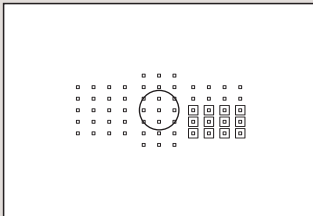
AF point expansion (four surrounding points)

Focus using one manually selected point, assisted by 4 other AF points (up, down, left, and right).



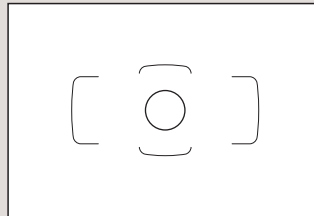
AF point expansion (eight surrounding points)

Focus with one manually selected point assisted by eight outer surrounding points.



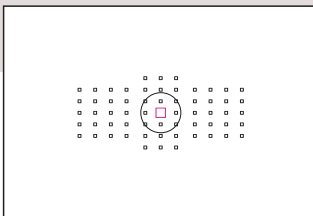
Zone AF

A cluster of active AF points; camera focuses on nearest subject with the zone. Select from any of nine available zones.



61-point automatic selection AF

All AF points are active; camera automatically selects point(s) to focus on primary subject.

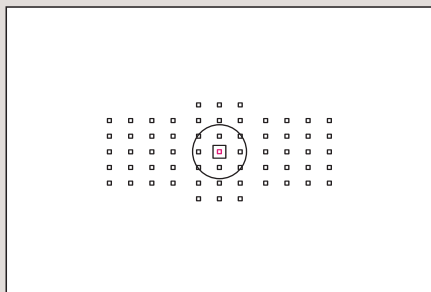


Single-point AF: Ideal for stationary subjects in One-shot AF

Single-point AF is an AF Area setting where one manually selected AF point is used to focus. For experienced photographers or when it is easy to track the subject with a single AF point, AI Servo AF can be utilized when continuously shooting moving subjects. However, Single-point AF is often more effective for shooting still life and landscapes with One-shot AF mode.

Focusing on a small or narrow area

Reduce the size of a single AF point to focus on one very precise area of a subject



When set to **[Single-point Spot AF]**, a small rectangle is displayed inside the manually selected AF point.

Snapshot of a BMX rider wearing a helmet. Focus was pinpointed on the eye using **[Single-point Spot AF]**.



[Single-point Spot AF] is effective when there is an obstacle like the edge of the helmet or visor near the eye you want to focus on. With standard AF systems, this can result in the AF system focusing on these edges rather than eye of the subject.

[Single-point Spot AF] mode can be ideal to focus on a small area of the subject. This option makes it possible to focus critically, even when there is an obstacle near the area you want to focus on. A common example when shooting

sports is when you want to focus on the eyes of a rider wearing a helmet (see photos above). With normal settings, the larger area of a standard AF point can easily get caught on the edge of the helmet near the eye, resulting in

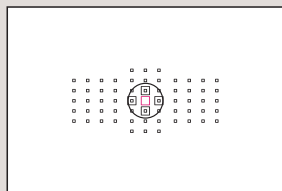


the camera focusing on this edge. In situations like this, **[Single-point Spot AF]** makes it possible to focus more precisely on the rider's eye. As **[Single-point Spot AF]** only focuses on one very small area, it is not really suited to

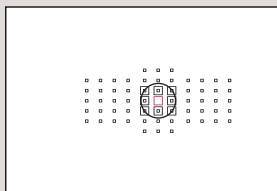
capturing fast moving subjects when focus-tracking with AI Servo AF and may take longer to focus than other AF Area selection methods.

For fast moving subjects that are difficult to track with a

Enlarge the active AF area to keep a larger focus area on moving subjects



AF point expansion (4 surrounding pts.)



AF point expansion (8 surrounding pts.)

Viewfinder display of **[AF point expansion]**. The manually selected AF point and surrounding points lights up.



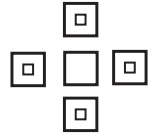
[AF point expansion] mode can be excellent for subjects with erratic movement. **[AF point expansion (4 surrounding points)]** is well-suited for situations when the primary, central AF point may momentarily see a plain, non-detailed area of a moving subject — focus-tracking can continue, using any surrounding AF point.

[AF point expansion] is an AF area choice that is excellent when shooting sports. A single, primary AF point is normally used — but with either four or eight surrounding "stand-by" points, the camera can immediately switch to

an outer AF point if the subject suddenly moves from the central point or if that central point begins to fall on an area of a subject with little detail, texture or contrast.

Any of the 61 AF points can be selected as

single AF point



Hints and tips

[4 surrounding points] and [8 surrounding points] options can be selected, based on the predictability of anticipated subject movement

The larger AF Area covered by **[8 surrounding points]** makes it an excellent choice to keep AF upon a subject that will move quickly and erratically. For more predictable movement, the **[4 surrounding points]** option still provides a compositional safety net, as well as helping with subjects lacking detail.



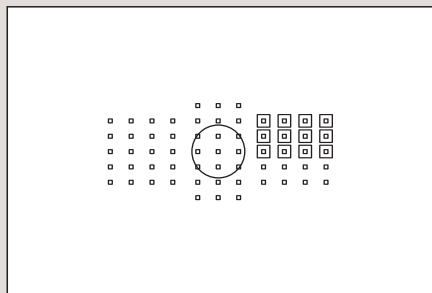
The expanded AF Area means more chances to not only keep AF upon your subject, but upon a detailed part of the subject. The larger **[8 surrounding points]** AF Area is especially useful with subjects that you expect may move erratically as you focus-track with AI Servo AF.

the primary AF point, even at the outermost areas of the AF array — allowing great flexibility in composition of action subjects. The larger, expanded AF area makes it easier to keep AF upon fast and erratically moving subjects.

In addition, when the subject has a lot of movement, setting Case 5 or Case 6 from the AF Configuration Tool is also recommended. This will speed up the process of switching from the primary AF point to an outer one.

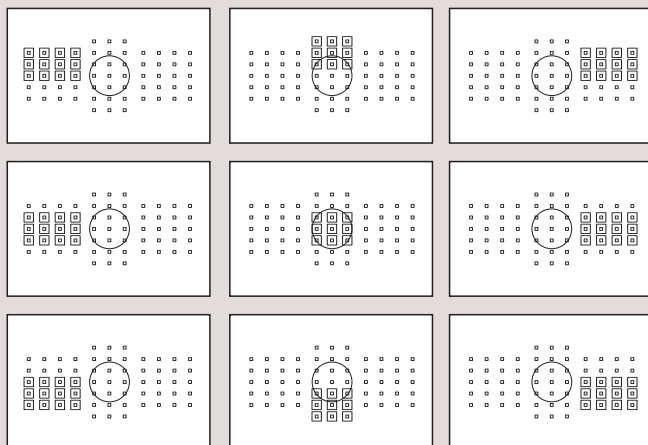
Continuously focus on the nearest subject, using a large

For larger subjects or subjects that move over a larger area



The selected AF points display in **[Zone AF]**.

With the fence on the right, facing the camera, picking the upper-right Zone gave a large AF Area to follow that fence. The camera will automatically change which AF point(s) are active in order to keep the closest part of a subject in focus.



Nine user-selectable locations for an active zone, in [Zone AF]

[Zone AF] forms a fixed cluster of AF points, in any of nine preset areas. The active zone is always manually selected by the photographer and can be moved at any time. **[Zone AF]** then focuses on the nearest subject in that zone.

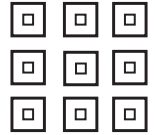


Here's another AF Area setting that lets the photographer work with a larger active group of AF points. But unlike AF point expansion, **[Zone AF]** always automatically chooses which AF point(s) within a zone will be used and

always focuses on the nearest subject (or part of a subject) within the Zone.

This is more suited for situations when a subject has no obstacles that may block the AF points. And, it makes **[Zone AF]** a useful option

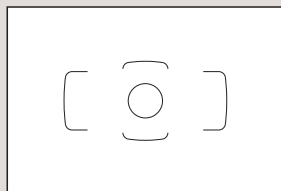
zone of active AF points



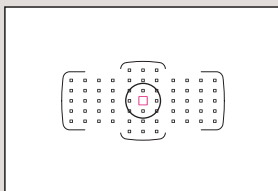
when erratic subject movement may make it hard to keep a central, primary AF point upon something like an athlete's face. With multiple subjects, it's likewise excellent to get sharpest focus on the one nearest the camera.

AI Servo AF with all 61 points used for automatic tracking

Continuously focus-track not only as subjects come toward or away from camera, but if

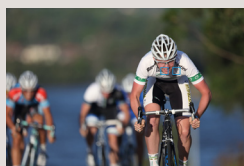
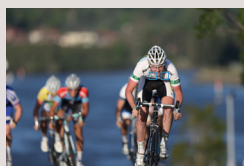


One-Shot AF



AI Servo AF

With AI Servo AF and **[Automatic AF point selection]**, the user presets one AF point as the starting point to begin focus-tracking a subject. As it moves, this AF Area setting continues to select other points as needed, automatically.

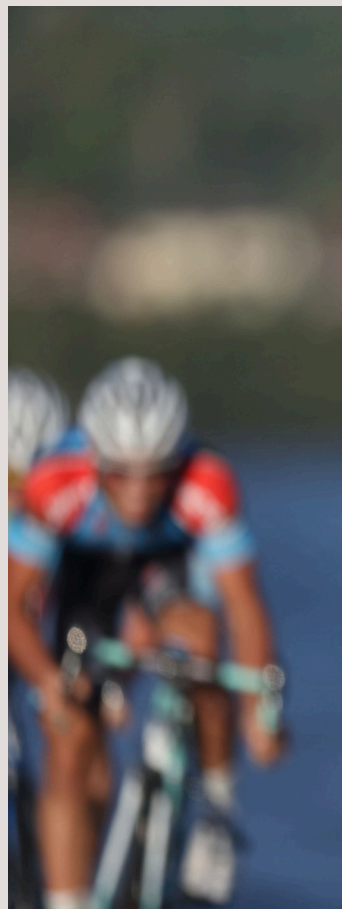


Steady, continuous AI Servo AF with subjects that move to the left or right of the frame — whether it's their movement or the photographer's.

Shooting started by pinpointing focus on the lead cyclist with a manually selected center AF point. While taking continuous shots, the camera was moved to the left so the following cyclists to the left of the leader are rendered beautifully out of focus in the background. **[Automatic AF point selection]** progressively selected right-side AF points to keep the main subject in focus.

Hints and tips

AI Servo AF with **[Automatic AF point selection]** requires the user to pre-select one AF point to begin focus-tracking a moving subject. New with EOS-1D X firmware v. 2.0: An AF menu option to link the last AF point used for manual selection as your starting point if you switch to **[Automatic AF point selection]**



[Auto selection of 61 AF points]: Combined with AI Servo AF, it's the only AF Area mode that can automatically change AF points to continue to cover a subject, moving side-to-side across the entire 61-point AF array. Any time you want the compositional freedom to have a subject start on one side of the frame and shoot

continuous shots as it moves to the opposite side, **[Automatic AF point selection]** should be considered.

This AF Area mode constantly updates the active AF points visible in the viewfinder, as moving subjects are tracked. And the EOS-1D X adds one special capability: EOS iTR —

they move laterally across the frame



Intelligent Tracking and Recognition.*

Using actual color information gathered by the camera's 100,000 pixel RGB metering system, the AF system can track a subject using its size, shape and color information — constantly updating the active AF point(s), as it focus-tracks it across the AF array.

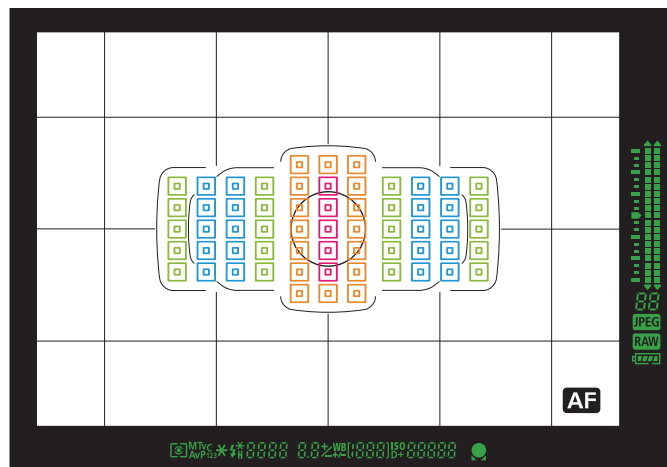
* EOS iTR is selectable in the 4th AF menu. Disabled by default, it can be easily activated by the EOS-1D X user. When off, only subject sharpness info is used to automatically select AF points during **[Automatic AF point selection]**.

Blue color of focus point is for illustration.

The 61-point AF has numerous cross-type points for great

Not just "cross-type" AF sensors — with f/4 and faster lenses, high-precision cross-type

Up to 41 high-precision cross-type AF points with f/4 or faster lenses, for great subject acquisition and AF accuracy



"f/2.8" AF points provide extra-high precision and are arrayed diagonally in an "X" shape, for superb AF detection with everyday horizontal and vertical subject detail. All 21 central AF points also provide standard-precision, cross-type performance with lenses f/5.6 or faster. Finally, twenty off-center AF points provide high-precision, cross-type AF when used with lenses f/4 and faster.

■ f/2.8 (high-precision, diagonal) and f/5.6 cross-type AF

■ f/5.6 cross-type AF

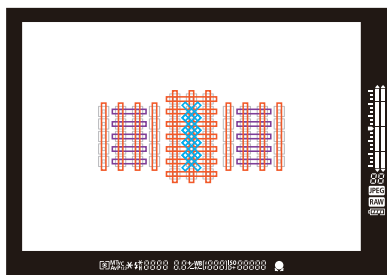
■ f/4 (vertical-line focusing) + f/5.6 (horizontal-line focusing) cross-type AF

■ f/5.6 (horizontal-line focusing) AF

*The colored AF points are for illustrative purpose only. This does not represent the actual viewfinder display.

Newly developed 61-point AF sensor

With AF coverage of 52% of the horizontal width of the actual image area, the 61-point AF system in the EOS-1D X provides tremendous compositional flexibility. Its beauty goes beyond what is seen in the viewfinder: superb ability to initially read and focus upon extremely out-of-focus subjects; AF down to -2 EV; link to the 100,000 pixel RGB meter (EOS iTR, during Automatic AF point selection), and more.



⌘ f/2.8 high-precision cross-type AF

f/4.0 high-precision, vertical-line AF

f/5.6 high-precision, vertical-line AF

⌘ vertical-line focusing AF

f/5.6 horizontal-line focusing AF

⌘ horizontal-line focusing AF

The AF system of the EOS-1D X has many attractive features, such as the high level of composition freedom with 61 different AF points, AF Area selection modes that take full advantage of the multi-point AF system and the AF Configuration Tool which gives incredible fine-tuning options to AI Servo AF. Of special note is the AF sensor itself: the high precision and improved tracking performance of each AF

point starts there. With the EOS-1D X AF focusing system, most f/2.8~f/4 lenses can utilize the 41 **high-precision** cross-type AF points. With this many high performance f/2.8 and f/4 AF points, it's possible for wide-aperture lenses to achieve an even higher level of focusing precision at these AF points than ever before.

tracking performance

sensors for superb focus acquisition and accuracy

f/2.8

AF characteristics with "Group A" lenses — f/2.8 & faster



EF400mm F2.8L IS II USM

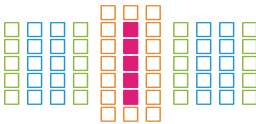


EF85mm F1.2L II USM

41 cross-type AF points (5 diagonal, extra-high precision) can be used with many lenses

Most wide-aperture lenses with a maximum aperture of f/2.8 (or "faster") are in Group A. With these lenses, five extra high-precision diagonal and twenty outer high-precision cross-type AF points are available — a total of 41

cross-type points — including the remaining standard-precision cross-type points in the central area. For technical reasons, with Group B lenses, one high-precision, diagonal cross-type point (instead of five) becomes available.



Group A

41-point cross-type AF, with five f/2.8 dual-cross AF points at the center

AF is possible with all 61 points. Extra high-precision, diagonal cross-type AF at five central AF points. All AF Area selection modes can be chosen.

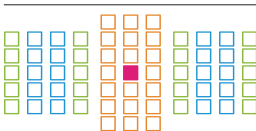
- f/2.8 (high-precision, diagonal) and f/5.6 cross-type AF (dual-cross AF)
- f/5.6 cross-type AF
- f/4 (vertical-line focusing) + f/5.6 (horizontal-line focusing) cross-type AF
- f/5.6 (horizontal-line focusing) AF

Major lenses

EF24mm f/1.4L USM	EF24mm f/1.4L II USM	EF35mm f/2 IS USM	EF28mm f/1.8 USM	EF35mm f/1.4L USM
EF35mm f/2	EF50mm f/1.0L USM	EF50mm f/1.2L USM	EF50mm f/1.4 USM	EF50mm f/1.8
EF50mm f/1.8 II	EF50mm f/1.2L USM	EF85mm f/1.2L II USM	EF85mm f/1.8 USM	EF100mm f/2 USM
EF135mm f/2L USM	EF135mm f/2L USM + Ext EF1.4x		EF135mm f/2.8 (with soft focus)	
EF200mm f/1.8L USM	EF200mm f/1.8L USM + Ext EF1.4x	EF200mm f/2L IS USM	EF200mm f/2L IS USM + Ext EF1.4x	
EF200mm f/2.8L USM	EF200mm f/2.8L II USM	EF300mm f/2.8L USM	EF300mm f/2.8L IS USM	EF300mm f/2.8L IS II USM
EF400mm f/2.8L USM	EF400mm f/2.8L II USM	EF400mm f/2.8L IS USM	EF400mm f/2.8L IS II USM	TS-E45mm f/2.8*
TS-E90mm f/2.8*	EF16-35mm f/2.8L USM	EF16-35mm f/2.8L II USM	EF17-35mm f/2.8L USM	EF20-35mm f/2.8L
EF28-70mm f/2.8L USM	EF24-70mm f/2.8L II USM	EF70-200mm f/2.8L USM	EF70-200mm f/2.8L IS USM	EF70-200mm f/2.8L IS II USM

Group B

41-point cross-type AF, with one high-precision, diagonal dual-cross AF point at the center

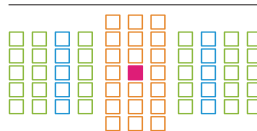


Major lenses

EF14mm f/2.8L II USM
EF20mm f/2.8 USM
EF24mm f/2.8
EF24mm f/2.8 IS USM
EF28mm f/2.8 IS USM
EF24-70mm f/2.8L USM

Group D

31-point cross-type AF, with one high-precision, diagonal dual-cross AF point at the center



Lenses

EF28mm f/2.8
EF40mm f/2.8 STM

AF is possible with all 61 points. Extra high-precision, diagonal cross-type AF at center point; high-precision at 20 outer AF points (shown in blue, above). All AF Area selection modes are available.

AF focusing is possible with all 61 points. Extra high-precision, cross-type AF at center point; high-precision at 10 outer AF points (shown in blue, above). All AF Area selection modes are available.

* Focus confirmation light works during manual focus (without any tilt or shift movements).

"Ext EF1.4x" is an abbreviation of various EF 1.4x Extenders.

f/4

AF characteristics with "Group C" lenses — f/4 and faster



EF70-200mm f/4L IS USM

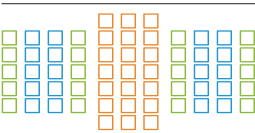


EF 17-40mm f/4 L USM

All 61 AF points available, with cross-type AF at 41 points

In Group C, 41 cross-type AF points can be used with lenses having an f/4 maximum aperture (or f/2.8 lenses using the EF 1.4x Extenders). Of these, the 20 points on the left and right are noteworthy, with a horizontal line

sensor (reading vertical subject detail) offering special high-precision performance. All 21 central AF points are cross-type as well, with standard precision. Some macro lenses with a maximum aperture of f/2.8 are also included.



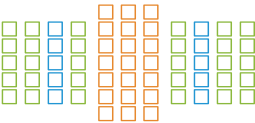
Group C
41-point cross-type AF points available
and they can be used with a high level
of tracking performance.

AF possible with all 61 points.
All AF Area selection modes are available.

Major lenses

EF50mm f/2.5 Compact Macro	EF100mm f/2.8L Macro IS USM	EF300mm f/4L IS USM
EF200mm f/2.8L USM + Ext EF1.4x	EF200mm f/2.8L II USM + Ext EF1.4x	EF300mm f/2.8L USM + Ext EF1.4x
EF300mm f/2.8L IS USM + Ext EF1.4x	EF300mm f/2.8L IS II USM + Ext EF1.4x	EF400mm f/2.8L USM + Ext EF1.4x
EF400mm f/2.8L II USM + Ext EF1.4x	EF400mm f/2.8L IS USM + Ext EF1.4x	EF400mm f/2.8L IS II USM + Ext EF1.4x
EF135mm f/2L USM + Ext EF2x	EF200mm f/1.8L USM + Ext EF2x	EF200mm f/2L IS USM + Ext EF2x
EF8-15mm f/4L Fish eye USM	EF17-40mm f/4L USM	EF24-70mm f/4L IS USM
EF70-200mm f/4L USM	EF70-200mm f/4L IS USM	EF70-200mm f/2.8L USM + Ext EF1.4x
EF70-200mm f/2.8L IS USM + Ext EF1.4x	EF70-200mm f/2.8L IS II USM + Ext EF1.4x	EF500mm f/4L IS USM
EF500mm f/4L IS II USM	EF600mm f/4L IS USM	EF600mm f/4L IS II USM

Group I
31-point cross-type AF points available;
10 are high-precision cross-type, with f/4 lens



Major lenses

EF200-400mm F4L IS USM +Ext x1.4 (When **not** using built-in Ext x1.4)

AF can be carried out using all 61 points (cross-type focusing is possible with 31 points). All AF Area selection modes available.

f/5.6

AF characteristics with "Group E" lenses — f/5.6 and faster



EF100-400mm f/4.5-5.6L IS USM



EF70-300mm f/4-5.6L IS USM

Majority of lenses can make use of the central 21-point cross-type AF

With the exception of a small group of lenses (groups F and G), almost all lenses that have a maximum aperture of f/4 or higher ("slower") are included in Group E and can use the

21-point cross-type AF (f/5.6, standard-precision cross-type) in the central area. Many f/2.8 wide-aperture telephoto lenses, combined with any EF 2x Extender, will fit into this group.



Group E

The central 21-point cross-type AF can be used

AF possible with all 61 points. Standard-precision, cross-type AF at 21 central AF points. All AF Area selection modes are available.

Major lenses

EF50mm f/2.5 compact macro + life size converter EF	EF500mm f/4.5L USM	EF100mm f/2.8 Macro USM
EF400mm f/5.6L USM	EF400mm f/4 DO IS USM + Ext EF1.4x	EF300mm f/4L USM + Ext EF1.4x
EF300mm f/4L IS USM + Ext EF1.4x	EF600mm f/4L IS USM + Ext EF1.4x	EF500mm f/4L IS USM + Ext EF1.4x
EF600mm f/4L USM + Ext EF1.4x	EF300mm f/2.8L IS USM + Ext EF2x	EF200mm f/2.8L USM + Ext EF2x
EF200mm f/2.8L II USM + Ext EF2x	EF400mm f/2.8L USM + Ext EF2x	EF300mm f/2.8L IS USM + Ext EF2x
EF300mm f/2.8L II USM + Ext EF2x	EF400mm f/2.8L IS II USM + Ext EF2x	EF400mm f/2.8L II USM + Ext EF2x
EF400mm f/2.8L IS USM + Ext EF2x	EF70-200mm f/2.8L IS USM + Ext EF2x	EF500mm f/4L IS II USM + Ext EF1.4x
EF600mm f/4L IS II USM + Ext EF1.4x	EF70-200mm f/4L USM + Ext EF1.4x	EF70-200mm f/2.8L IS USM + Ext EF2x
EF70-200mm f/2.8L IS II USM + Ext EF2x	EF70-300mm f/4-5.6L IS USM	EF70-200mm f/4L IS USM + Ext EF1.4x
EF28-300mm f/3.5-5.6L IS USM	EF100-400mm f/4.5-5.6L IS USM	EF70-300mm f/4-5.6L IS USM
EF70-300mm f/4.5-5.6 DO IS USM		EF200-400mm f/4L IS USM + Ext EF x1.4 (*1)

*1 When using built-in Ext EF x1.4 or externally-mounted Ext EF x1.4

Group F

21-points cross-type available, total of 47 AF points available to select



Major lenses

EF800mm f/5.6L IS USM
EF35-350mm f/3.5-5.6L USM

AF focusing is possible with 47 points (61-point AF is not possible). All AF Area selection modes can be available.

Group G

15-points cross-type available, total of 33 AF points available to select



Lenses

EF180mm f/3.5L Macro USM
EF180mm f/3.5L Macro USM + Ext EF1.4x
EF1200mm f/5.6L USM

AF focusing is possible with 33 points (61-point AF is not possible). All AF Area selection modes can be available.

f/8

AF characteristics with "Group H" lenses — maximum aperture f/8



EF500mm F4L IS II USM



Extender EF 2x III

Super telephoto lenses and extenders: AF now possible at f/8, at the center AF point

For many nature, wildlife and other photographers, it's often necessary to use tele extenders and focus at effective maximum apertures slower than f/5.6. EOS-1D X accommodates this, with its ability to focus with effective maximum apertures as slow as f/8.

Using a compatible f/5.6 lens with an EF1.4x Extender or an f/4 lens with an EF 2x Extender, AF is now possible at the center AF point with cross-type coverage. And, users can set AF point expansion (4 surrounding points) for an even larger active AF Area.

**Group H****Single cross-type AF point available**
☒ f/8 supported cross-type points

☐ f/8 supported points

The following AF Area selection modes are available:

- Single-point AF (Manual)
- Single-point Spot AF (Manual)
- AF point expansion (four surrounding points)
(four surrounding AF points are single-line, and cannot be manually selected)

Major lenses

EF400mm F4 DO IS USM + Ext 2x	EF500mm F4L IS II USM + Ext 2x	EF600mm F4L IS II USM + Ext 2x
EF500mm F4L IS USM + Ext 2x	EF600mm F4L IS USM + Ext 2x	EF100-400mm F4.5-5.6L IS USM + Ext 1.4
EF70-200mm F4L IS USM + Ext 2x	EF200-400mm F4L IS USM built-in Ext.1.4 + externally-mounted Ext 1.4	EF200-400mm F4L IS USM + externally-mounted Ext 2.0

The switchover from f/5.6 (or faster) to f/8 maximum aperture lenses

One interesting aspect of the EOS-1D X's AF system is that the camera instantly communicates with any lens you attach, once the camera is turned on. Maximum aperture information is immediately given to the camera and the EOS-1D X then applies this to its AF system — for instance, during manual AF point selection by displaying only those points that will be available and advising the shooter of which available AF points won't be cross-type (these blink during AF point selection). When a lens becomes a Group H lens — by adding an extender to change its effective maximum aperture to f/8 — only the center AF point becomes available. And if an off-center AF point was being used previously, the camera switches to the center point. No special action is required by the photographer, other than mounting the EF Extender.

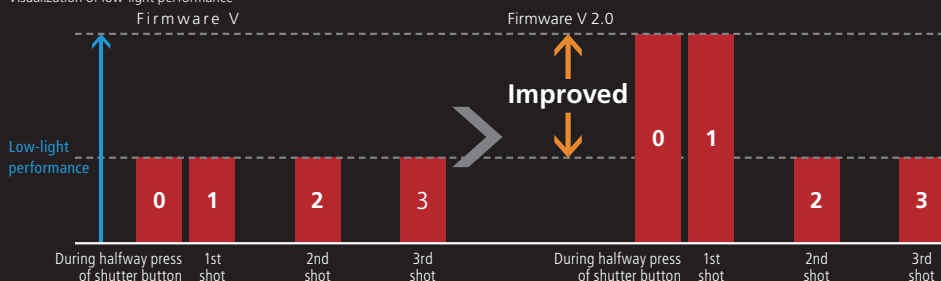


Improved AF performance with AI Servo AF

Improvement of AF performance in low light with AI Servo is possible through new parameter settings

Improved AI Servo AF low-light performance through a new algorithm

Visualization of low-light performance

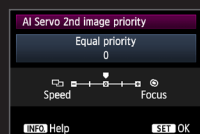
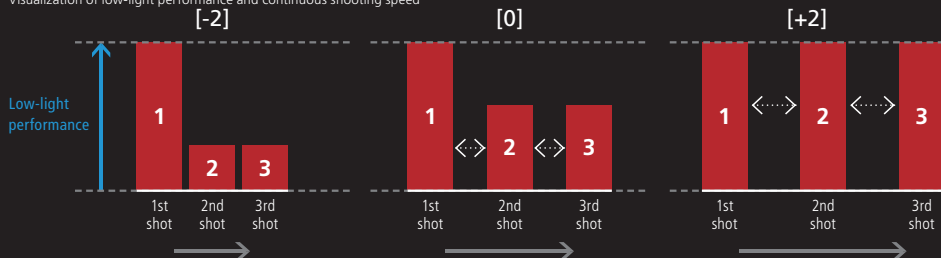


In AI Servo AF, initial low-light reading from the instant that AF is first activated and AF calculation for the first shot are improved — a new AF reading and control sequence gives the AF system a longer time to gather subject information, without slowing camera responsiveness. No action or settings are required from the photographer to realize this benefit.

Expanded parameters for [AI Servo 2nd image priority]

The new parameter [+2] lets you maximize low-light performance

Visualization of low-light performance and continuous shooting speed



AI Servo AF 2nd image priority:

This setting has always allowed users to define performance during continuous, high-speed shooting: prioritize sharpest possible AF, even if it means slowing the fps rate, or prioritize shooting speed, even if it means an occasional soft frame is possible in a high-speed sequence.

New with firmware V. 2.0: expanded range of settings

[+2] (focus priority) — even better low-light AF performance; **[+2]** greater fps speed priority

Low-light AF performance during AI Servo AF is a key benefit of the new V. 2.0 firmware for the EOS-1D X. Changes to the AF reading and control sequence improve this for initial AF readings and for the first shot in a sequence.

For subsequent shots in a high-speed, continuous sequence, there's a new and

expanded range of adjustments in the **[AF Servo 2nd image priority]** menu. In particular, the new **[+2] Focus Priority** setting allows even more time for AF calculation during high-speed shooting — and potentially better AI Servo AF in low-light conditions. Note that with Focus Priority, the FPS drive speed may slow

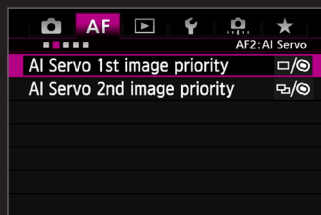


AF operation and Image/Focusing Priority settings

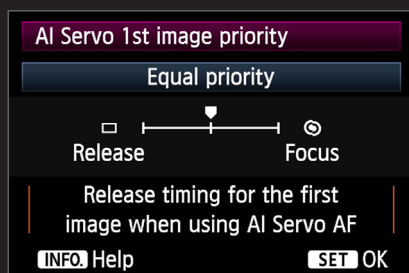
You decide whether focusing or shutter-release has priority in AI Servo AF

Image/Focusing parameters during AI Servo AF [Set in the AF 2 tab]

You can decide whether to put priority on focusing or shutter-release



1 1st image parameter [AI Servo 1st image priority]



Equal priority

This setting gives equal priority to both focus and shutter-release.

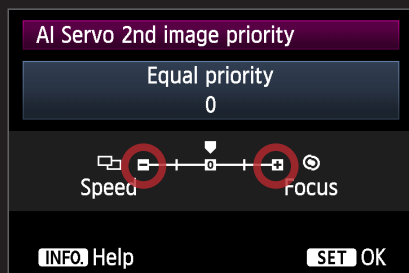
Release priority

This setting gives priority to minimizing any time lag and will allow shutter firing even if focus hasn't been confirmed. It is effective when you want to minimize any delay when shooting, sacrificing AF performance.

Focus priority

This setting gives priority to focusing on a subject and it cannot capture an image unless it is in focus. It is recommended when you want to ensure the first image in a sequence is in focus, even sacrificing response speed.

2 Parameters during continuous shooting [AI Servo 2nd image priority]



Equal priority

This setting gives an equal priority to both AI Servo autofocus and shooting speed for the 2nd and all subsequent frames in a sequence. The speed of continuous shooting may slow down when it is dark or in low-contrast situations.

Shooting speed priority

This setting gives priority to a continuous shooting speed, rather than priority on focus. Continuous shooting speed is less likely to drop. Effective when you want to shoot with a fixed interval between photos. New — setting [-2] will help maintain fastest FPS continuous drive speeds.

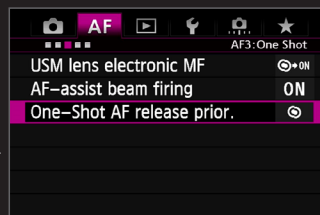
Focus priority

This setting gives priority to focusing, rather than continuous shooting speed. At the new [+2], it won't allow shooting unless focus is confirmed, which can reduce continuous shooting speed. Recommended when you want maximum sharpness from shot to shot, [+2] makes the most of AF low-light performance improved by the firmware upgrade.

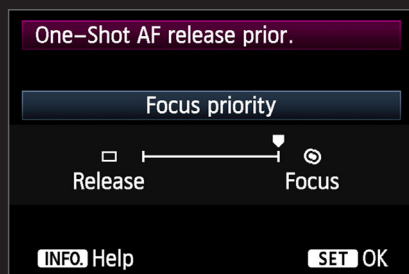
○ indicates a new parameter.

Image/Focusing parameter for One-Shot AF [Set in the AF3 tab]

With stationary subjects: place a priority on confirming sharp focus or releasing shutter without any delay



[One-Shot AF release priority]



Focus priority

You cannot shoot a picture unless it is in focus. This is effective when you want to confirm sharp focus on a stationary subject.

Release priority

Priority is on brief "lag time," rather than focus. It is recommended only when you want to put priority on capturing brief photo opportunities rather than focus.

EOS-1D X allows almost total control over how the camera works in the photographer's hands. One aspect of this is the balance between instant shutter response and the need to confirm sharp focus before shooting.

Moving subjects, with AI Servo AF:

The EOS-1D X handles what happens when the user first presses the shutter button fully (AI Servo 1st image priority) and how any subsequent shots in a continuous sequence are treated (AI Servo 2nd image priority) separately.

With **[Focus priority]**, shooting is delayed until after the camera has focus on a subject (this could be by just a few milliseconds). With **[Release priority/Shooting speed priority]**, shooting takes place instantly, with minimal delays — out of focus images may occur. The

default **[Equal priority]** sets equal priority on both (attempting to focus without major delays to shutter release timings), ideal for most shooting situations. To make use of low-light performance improved by the firmware upgrade during continuous shooting, set the AI Servo AF **[2nd image priority]** parameter to **[Focus priority: +2]**.

Stationary subjects, with One-shot AF:

Historically, EOS cameras have been factory-set to give Focus Priority here. However, in the AF3 menu tab, EOS-1D X users are free to adjust this, with **[One-Shot AF release prior.]**

- **[Focus priority]:**
Camera won't fire until focus confirmed
- **[Release priority]:**
Camera will fire, without delay

Automatically switching of AF points for horizontal and vertical shooting

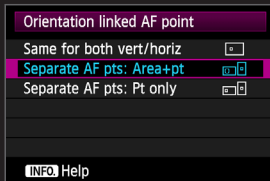
Orientation Linked AF: memorize different AF points and have them automatically switch when the camera is rotated from horizontal to vertical

Set up steps

Use [Orientation linked AF point] in the [AF4] tab to set the AF points for each orientation

1

Select [Separate AF points: Area + pt] option from [Orientation linked AF point]



The process is quick and easy — and using it in the field is even easier.

- 1) Select **[Separate AF pts...]** in the Orientation Linked AF point menu (**[AF4 tab]**)
- 2) Pick an AF Area mode and manually select an AF point with the camera held horizontally, and repeat with it held vertically
- 3) AF points are memorized and will change automatically as camera is rotated during actual shooting

2

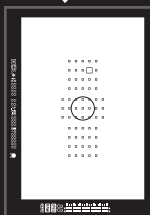
Change the camera position and select the desired AF point or AF Area setting



A
Horizontal position



B
Vertical position with grip at the top



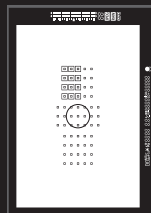
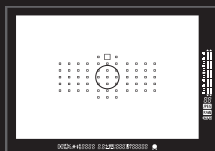
C
Vertical position with grip at the bottom



Select the AF frame for each

3

By changing the camera's orientation, the set AF points and modes will switch automatically

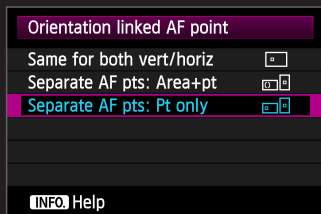


Select the [AF area selection mode] in each position



[Separate AF points: Point only] is added to [Orientation linked AF point]

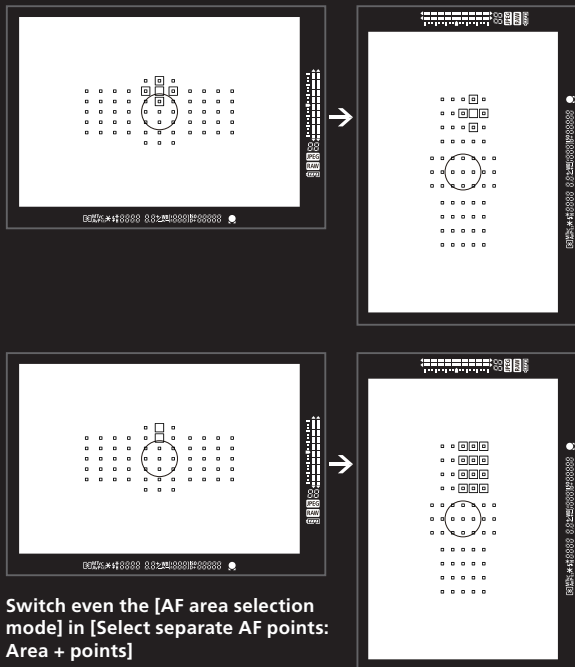
It is now possible to have different AF points, but preserve the same [AF Area selection mode], for both horizontal and vertical shooting



New: [Separate AF pts: Pt only]

This Orientation linked AF point option keeps the same AF Area setting to your horizontal and vertical AF points. If you change the AF Area on one (for instance, from Single AF point to AF Point Expansion), the other orientation changes simultaneously.

The existing [Separate AF pts: Area + point] option allows independent AF Areas to be selected for horizontal and vertical orientations — for some situations, a desirable option. However, if the AF Area is changed for one orientation, be aware that it won't change for the other. The new "Pt. only" option does change both, if one is changed by the photographer.



Switch even the [AF area selection mode] in [Select separate AF points: Area + points]

Orientation Linked AF is a remarkable advance for any picture-taking scenario where the photographer may need to quickly change from horizontal to vertical — from fashion or portraits to sports. It allows preselecting an ideal AF point for horizontal shots and a different AF point for verticals. Then, as the camera is rotated, it instantly switches automatically from one memorized AF point to the other.

Until now, if Orientation Linked AF was active, AF Area for each was handled independently. If it was changed for one orientation, it remained unchanged at the other orientation setting.

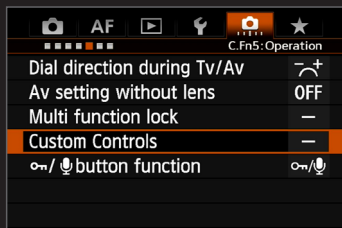
Separate AF Area settings could be in effect for a horizontal and for a vertical AF point.

Now, with Firmware V. 2.0 for the EOS-1D X, a new option is added: [Separate AF pts: Pt. only]. With this, the AF Area is linked and remains constant for any Orientation Linked AF points. If one AF Area is changed (for instance, the AF Area for a horizontally selected point), it will automatically change for any memorized vertically-selected AF points.

Orientation Linked AF retains its usefulness — a shooter can put an AF point where it needs to be, no matter how he or she holds the camera.

Instantly recall an AF point [Switch to registered AF point]

Store a preferred AF point for instant access at the touch of a button




Use [Custom Controls] from the [C.Fn5: operation] menu

Using the **[Custom Controls]** option from the custom function **[C.Fn5: operation]** menu allows an AF point to be registered and recalled instantly. This function can also be used to assign various functions to the different camera controls.

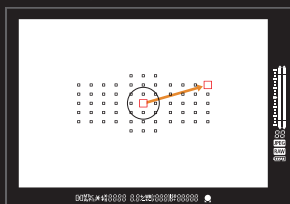
Set up steps

- 1 There are two options to customize the controls to register and AF point

A Assign **[Metering - AF start]** to the AF-ON button or the * button, then press INFO and select **[Registered AF point]**

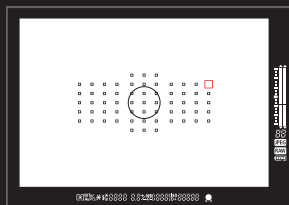
B Assign **[Switch to registered AF point]** to the , LENS, or M-Fn2 button. Press INFO to select if the option is applied only when the button is pressed or maintained until button is pressed again.


- 4 After selecting another AF point or AF area mode, press the assigned button (selected in stage 1) to switch to the registered AF point.



- 2 Manually select the AF point you will want to recall.

(This is possible with all AF Area selection modes except



- 3 Press the  button while pressing the ISO button until you hear a beep.



"SEL HP"

appears, indicating the AF point has been memorized

AF point registration and usage is described above. Also, for more advanced usage, this setting can be combined with **[Orientation linked AF point]** setting (described on pages 46-47). Selecting the option **[Select separate AF points]** from the **[Orientation linked AF point]** option makes it possible to register and recall AF points separately for all three positions, vertical (grip top/bottom) and horizontal as well as the remembered AF point for orientation.

When the AF-ON button or the * button are assigned the function **[Metering - AF start]**, instant switching of registered AF points becomes possible. Press the INFO button in the **[Customize Controls]** assignment screen and then select **[Registered AF point]**. Now when the button is held, the AF will use the registered AF point.

How to cancel registered [Switch to registered AF point]

Press  and .



Applied example of instant switching to a memorized AF point:

Shooting the side to side movement of tennis strokes. After photographing the player's forehand stroke with a manually selected AF point at the upper right, it was switched to the AF point registered at the upper left with a single push of a button. This gave the ability to instantly compose a backhand shot, while AI Servo AF continued to focus-track a moving subject.

As soon as the photographer's thumb comes off the back button, AF returns to the original focus point

Beyond Orientation Linked AF, another function that is effective for quickly switching AF points while shooting is AF point registration and recall, which is possible using **[Custom Controls]**. There are several methods to achieve this; one is to assign registered AF points to a button via **[Custom Controls]**, as discussed on page 48.

The second method is the **[Register/recall shooting function]**, again within Custom Controls. This allows memorizing a number of different shooting functions, including AF

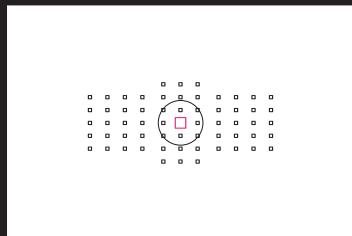
settings like AF Area select mode, whether to jump to a memorized AF point ("HP icon"), and even AI Servo AF settings. Applying this to the a back button lets the EOS-1D X user instantly switch not only AF point, but potentially the AF Area as well.

Further refinement in operation is possible with the <Depth-of-field preview> and the <Lens AF stop> buttons when set to **([Switch to registered AF point] setting)**. These give the choice to **[Switch only while pressed]** or **[Maintain switching until pressed again]**, giving even more control to the photographer.

Instantly switching AF Area selection modes with a single button

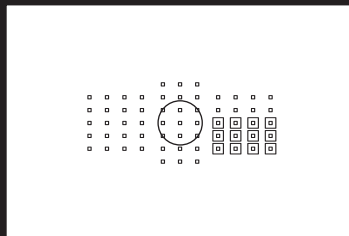
[Register/recall shooting function] can instantly change settings at the touch of a button

Change AF Area instantly



Original AF point, with Single Point AF

➔ **AF-ON**
By pressing the
assigned button ➔



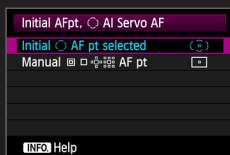
Instantly changed to Zone AF,
and registered "AF start position"

Instantly change exposure mode, ISO, AI Servo AF detail settings, the active AF point and/or AF Area setting — by simply assigning a series of memorized shooting functions to the AF-ON or AE Lock buttons... just press the button and totally change how the EOS-1D X operates, even in the middle of a high-speed shooting sequence.



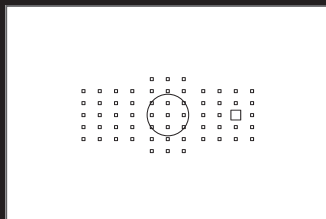
Use together with [AF Area selection mode] one-button switching for enhanced convenience

Link the starting point for Automatic AF point selection with the last manually-selected AF point

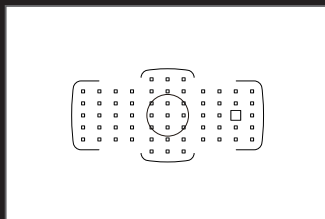


New: [Initial AF pt., AI Servo AF] in [AF4] menu:
[Manually set points in] option uses last manually-selected AF point as the starting point with Automatic AF point selection

Seamless AF Area transition to Automatic AF point selection, when shooting moving subjects with AI Servo AF. The last manually-selected AF point location can be the starting point for focus-tracking with Automatic AF point selection.



[Manual selection: 1 point AF]



[Auto selection: 61 point AF]

It's now your choice: link the starting AF point for Automatic AF point selection to the last manually-selected AF location or keep them independent

[Initial AF pt. selected]:

Start point for Automatic AF point selection (in AI Servo AF) is independent of last manually-selected point

[Manual AF pt]:


Buttons that can be assigned to switching AF area selection modes

There are the five buttons that can be assigned to switch AF functions. The AF-ON button and * button can be assigned with **[Custom Controls]** to **[Register/apply shooting functions]** and the LENS button and M-Fn2 button can be assigned with **[Switch to registered AF functions]**.

'Register/apply shooting functions' assigns.

AF-ON AF-ON button * AE lock button

'Switch to registered AF functions' assigns.

LENS lens AF stop button  depth-of-field preview button

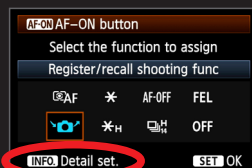
M-Fn2 Multi function2 button

Set up steps

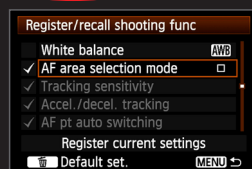
[Register/apply shooting functions]



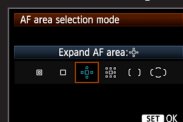
Assign to the AF-ON button or the * button to **[Register/apply shooting functions]**



Press the INFO. button



Select the **[AF area selection mode]**



Assign **[Register/apply shooting functions]** to the AF-ON button or the * button with the custom function's **[Custom Controls]**. Press the INFO. button on the assign function's selection screen, (various functions can be set) and select the **[AF area selection mode]** that you want to use.

AF area selection modes, such as **[Single-point AF]** and **[AF point expansion]**, are effective for switching according to the size and type of subjects. While looking through the viewfinder, it can be difficult to change AF Area while tracking the subject. However, by assigning the AF Area selection modes you want to use to specific buttons, you can switch instantly while continuing shooting.

There are five buttons that can be assigned. Think about the characteristics of the sports

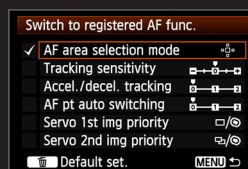
[Switch to registered AF functions]



Assign to the LENS or depth of field preview button



Press the INFO. button now



Select the **[AF area selection mode]**

Or assign **[Switch to registered AF functions]** to the LENS button or * button with **[Custom Controls]**. Press the INFO. button on the assign function's selection screen and from various AF functions, select the **[AF Area selection mode]** and select the one that you want to use.

and subjects you want to shoot beforehand and assign the AF area selection modes you think you will use.

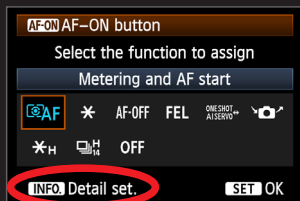
By assigning different modes to each of the five buttons, therefore five modes, you can control up to five modes at will. In addition, aside from the AF Area selection modes, various AF and even exposure functions can be registered and applied. By assigning settings as needed, you can instantly adjust the EOS-1D X to conditions as they change by just pressing a



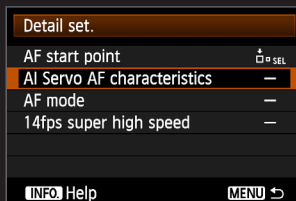
Enhanced "back-button AF"

Another way to instantly change AF operation with a push of a button

- 1 Both the AF-ON and AE Lock buttons can be reconfigured for more than just "back-button AF." Three different AF features can now be linked to either button.



Press the INFO button when the button customization button is in AF-ON/*



In detailed settings, the following four parameters can be set: [AF start point], [AI Servo AF characteristics], [AF mode] and [Super high-speed continuous shooting mode]

In [Custom Controls] (C.Fn5 menu), select either the <AF-ON> or <*> buttons. Highlight [AF/Metering start] icon and then press the camera's INFO button to access the Detail settings screen. Now, select any (or all) three AF settings: whether AF jumps to a memorized AF point; Case 1-Case 6 for AI Servo AF; and instant switch to One-Shot or AI Servo AF operation.



Set up two "back buttons" with different AF characteristics. Then change instantly during shooting, by just pressing a different button

Assign [Case1] to AF-ON

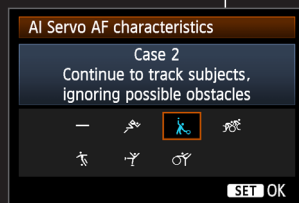


Assign [Case2] to *

Example:

Switch AI Servo AF characteristics with the AF-ON button and * button

- A wedding shooter can instantly change to AI Servo AF, for the bride coming down aisle, by pressing one of the back buttons
- A wildlife photographer can change AI Servo AF to accommodate obstacles when tracking a moving subject
- A baseball shooter can switch over to the 14fps super high-speed drive mode for shots of batters without AI Servo AF



When usually using the AF-ON button [Case1] to shoot, use the * button [Case2] to shoot when there are many obstacles

2 It's now possible to assign [ONE SHOT ⇌ AI SERVO] to the AF-ON and * buttons



Instantly switch from One Shot AF to AI Servo AF (or vice-versa) while either back button is pressed

[ONE SHOT ⇌ AI SERVO] has been added to the settings that can be assigned to the AF-ON and * buttons using [Custom Controls]. It's especially useful for fashion, portrait and other shooters working primarily with stationary subjects that might move unexpectedly. When the shooter's thumb comes off the back button, the EOS-1D X immediately reverts to original AF.



When it is difficult to press the M-Fn2/ⓘ button which could previously be used for assigning functions...

... AF-ON/* buttons can easily be used to switch to One Shot and AI Servo while looking through the viewfinder

Although it has been possible to assign [ONE SHOT ⇌ AI SERVO] to the M-Fn2 and ⓘ buttons, when it is difficult to press these buttons on the front of the camera, it's effective to assign this function to the AF-ON and * buttons. When quick shooting is required, you can now instantly switch AF operation settings.

The EOS-1D X has always been able to assign AF-Start to a back button and also revert to a memorized AF point location. However, firmware V. 2.0 adds three significant new features that can be instantly called upon when one of the buttons is pressed:

- **Select a different "Case" for AI Servo AF**
- **Switch from One Shot AF to AI Servo AF** (or vice versa)
- **Switch from Continuous-High to 14fps super high speed drive mode**

The key take away for professional photographers is that more than ever, the EOS-1D X can be configured to dynamically change and adjust to new shooting conditions — while it's in the photographer's hands and, in many instances, without needing to even remove it from his or her eye.

Custom Controls is now a gateway to transform the camera and the way it operates. Versatile in its factory-default state, firmware V. 2.0 endows it with newfound flexibility.



Exposure Compensation is now possible with Auto ISO in Manual exposure mode

Lighten or darken final exposure with locked-in aperture & shutter speed

Two methods to apply Exposure Compensation with Auto ISO:

1 Exposure compensation from the Quick setting (Q) button

In M mode and ISO speed Auto



Press "Q" button: Quick Control screen immediately appears



Highlight Exposure Compensation scale, and turn Quick Control Dial to apply

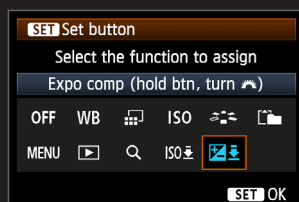
When M mode and ISO Auto are set, you can use the Q button to enter the quick settings screen to control exposure compensation parameters.

Because we received many requests to make exposure compensation possible during Auto ISO shooting in M mode, this feature has been included in firmware V. 2.0. Two methods for adjusting exposure compensation are possible: adjusting it from the quick settings screen and assigning the exposure compensation function to the SET button + Main Dial for easy access while using the viewfinder.

2 Assign [Exposure compensation] to the SET button

In M mode and ISO speed Auto

Assign exposure compensation to the SET button using [Custom Controls]



SET button



Exposure compensation is available from the main dial

Intentional Exposure Compensation with Auto ISO in Manual exposure mode can be assigned to the SET button, within [Custom Controls]. Press SET button and turn Main Dial on top of camera to adjust.

Because shutter speed and lens aperture are locked in place with Manual exposure, Auto ISO allows deliberate Exposure Compensation by adjusting the ISO level. Note that if the ISO displayed in the viewfinder remains fixed at the upper or lower setting you've defined in the Auto ISO range (in the shooting menu) as you rotate the appropriate dial, no further compensation will be possible.



Minimum Av/P mode shutter speed with ISO Auto expanded to 1/8000 sec.

Reduce camera shake and subject blur when Auto ISO is used in Av and P modes

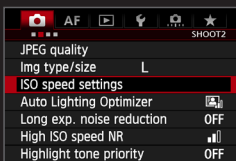
Min. shutter spd.					
Shutter speed					
1/8000					
AUTO	1/8000	1/4000	1/2000	1/1000	
1/500	1/250	1/125	1/60	1/30	
1/15	1/8	1/4	0"5	1"	
INFO Help					

Minimum shutter speed at ISO Auto expanded from 1/250 to 1/8000 sec.

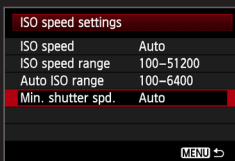
Up to now, EOS-1D X's **[Min. shutter speed.]** was 1/250 sec; firmware V. 2.0 expands this to 1/8000 sec. In Av and P modes, you can now dial in a faster minimum shutter speed and know that Auto ISO will raise ISO as needed (if light levels drop) to keep shutter speeds at or above this minimum level.

Setting procedures

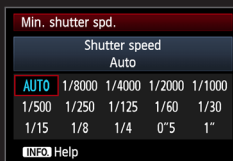
In **[ISO speed settings]** **[Min. shutter speed.]**, you can select the minimum shutter speed from 1/8000 sec. to 1 sec. in 1-stop increments.



[AF tab 2]
From **[ISO speed settings]**



Select **[Min. shutter speed.]**



And choose a minimum shutter speed

New: [Same exposure for new aperture]
Maintains constant exposure in M mode, if lens aperture is forced to be smaller



Lens with max.
aperture value of f/2.8



Lens with max.
aperture value of f/4

[Same exposure for new aperture] is in the Custom Function menu, on menu screen **[C.Fn6: Others]**

If using a wide lens aperture in Manual mode and the lens then changes to a **slower** maximum aperture, this new feature will adjust either ISO or shutter speed to keep constant final exposure:

- Switching from wide aperture lens to slower lens
- Shooting without and, then with, an EF 1.4x or 2x Extender
- Shooting with a variable aperture zoom at a wide focal length, at widest aperture, then zooming to a longer focal length

Another function added to ISO Auto is an expanded shutter speed for **[Min. shutter speed]**. The minimum shutter speed that was previously 1/250 sec. is now expanded to a maximum of 1/8000 sec. By setting a high shutter speed above a certain value when in ISO Auto, you can reduce the risk of blurs from

subject or camera movement. ISO Auto in P and Av modes has suddenly become more practical to the professional user.

And, a new Custom Function now allows automatic exposure shifts of either a manually-set ISO or shutter speed in M mode to keep final exposure constant if lens aperture slows.