A-B-A imaging differs from the conventional scans in that the images of a sample are acquired using a sequence of A-B-A-A steps, where A and B represent different imaging conditions. This approach allows for the detection of small changes in sample properties, which is particularly useful in materials science and biology.

A-B-A imaging is performed using a scanning electron microscope (SEM) and involves the following steps:

1. **A-step**: In this step, a standard imaging condition is used to acquire an initial image of the sample.
2. **B-step**: A modification is applied to the imaging conditions, such as changing the voltage or the angle of incidence of the electron beam. This step allows for the detection of changes in sample features or properties.
3. **A-step (second)**: Another image is acquired under the standard conditions to determine the magnitude of the change caused by the B-step.
4. **A-step (third)**: A final image is acquired under the standard conditions to confirm the consistency of the sample.

By analyzing the changes between the A-step images and the B-step images, researchers can gain insights into the sample's properties and behavior under different conditions.

Figure 1: Diagrammatic representation of the features in A-B-A imaging.