

The transmitter modulates these impulses with the RF frequency. Because another frequency than on the replay path is used on the interrogation path, an expensive duplexer can be renounced.

The antenna is usually mounted on the antenna of the primary radar set and turns synchronously to the deflection on the monitor therefore.

In the aircrafts transponder:

A receiving antenna and a transponder are in the airplane.

The receiver amplifies and demodulates the interrogation impulses.

The decoder decodes the question according to the desired information and induces the coder to prepare the suitable answer.

The coder encodes the answer.

The transmitter amplifies the replay impulses and modulates these with the RF reply-frequency.

Again in the interrogator on the ground:

The receiver amplifies and demodulates the replay impulses. Jamming or interfering signals are filtered out as well as possible at this.

From the informations "Mode" and "Code" the decoder decodes the answer.

The monitor of the primary radar represents the additional interrogator information. Perhaps additional numbers must be shown on an extra display.

Source: <http://www.radartutorial.eu/13.ssr/sr04.en.html>