RADETEC

SAFE SHOOTING RANGE
User's Manual

Date	03 19 2018
Version	1.0
Author	RLS
Revised by	
Approved by	

Read the instructions and warnings in this document carefully and understand them before using these devices. If there is anything you do not understand, seek advice from your distributor or contact RADE TECHNOLOGY CORP. at contact@radetecusa.com

WARNING: Recognize the safety characteristics of the shooting facilities and the weapon you are using, RADETEC devices do not replace in any case the procedures of safe handling of the weapon and the safety procedures of the shooting facilities.

WARNING: These devices are designed to function properly as its original condition. Do not alter or disassemble any device. Do not replace any parts unless you are factory-trained to do so and then use only original factory parts from RADE TECHNOLOGY CORP.

WARNING: Any liability arising from negligence, physical or material damages due to any use of the RADETEC devices not specified in this document will exclusively relate on owners and users of firearms.

CARDINAL RULES OF SAFETY

Always treat all firearms as if they were loaded.

Never allow the muzzle of any firearm to point at anything you are not willing to destroy.

Never put your finger near the trigger until you are ready to fire. Do not depend of any mechanical device for your safety!

Always be sure of your target and what's around and beyond it.

When you pick up a gun that, even for an instant, has been out of your direct, continuous control, the first thing you must do, while following the above rules, is to open the guns' action and determine whether or not the gun is loaded.

All guns left unattended, even briefly, must be made inoperable or inaccessible to children and other unauthorized users.

DECLARATION OF CONFORMITY

REVISION HISTORY

Version	Date	Page / section / Affected paragraph	Autor	Reason of change / Observations
1.0	03-19-2018	All sections	RLS	Final Draft

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1. System Description

Security:

The Safe Shooting Range System guarantee the safety of the controlled gun thanks to the smart management of wireless communications. The smart management automatically blocks between different set parameters or any malfunction: connection lost, communications failure, low battery, call button on shooters device, etc.

Functionality:

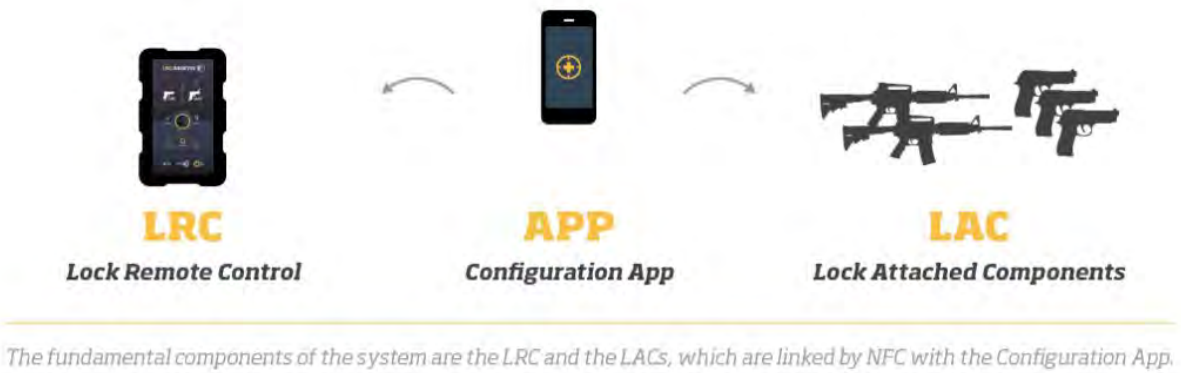
The firearms' original functionality is maintained and not compromised.

SSR system is intended to be used with live fire.

The system does not require any modifications to the firearm and is completely reversible.

Management/Use

The SSR system can admit up to 4 remote controls (LRC) simultaneously, and each remote control is capable to control up to 50 firearms.



The fundamental components of the system are the LRC and the LACs, which are linked by NFC with the Configuration App.

The system is made up of a remote control called LRC, with which the instructor remotely controls all the firearms, giving them permission or not to fire

These orders are received and executed by the LAC devices integrated in the shooter´s firearms, which immediately ensure or enable the weapons according to the orders given by the instructor.

The LRC and the LAC are linked by NFC with the configuration App of the smartphone[1]

[1] Smartphone with NFC and Android has been tested for Android, from 5.1.1 to 7.0 versions

The configuration is completely secure since it is based on the NDC communication system used in contactless cards.

This short-range system allows an immediate configuration, which is very easy since the App provides step-by-step instructions for each function; when associating new devices, when removing devices, etc.

2. System Components

2.1. Lock Remote Control (LRC)

The remote control (LRC) controls the system. From this terminal, the firearms assigned to the LRC are locked or unlocked and they receive and manage all the information, visual and acoustic incidences.

The LRC manages the shooting exercise and it confers the full control over the firearms that have linked, therefore, its operator must be the instructor.

Up to 4 remote controls (LRC) can be arranged in 4 different channels in a single *Safe Shooting Range* system and, in turn, each LRC can control up to 10 firearms groups (1 root group and 9 independent groups). Each LRC allows controlling up to 50 firearms per system distributed among the groups that the instructor wants to create.

The *Safe Shooting Range* parameters´ configuration needs to be done in both on this terminal and the LAC.

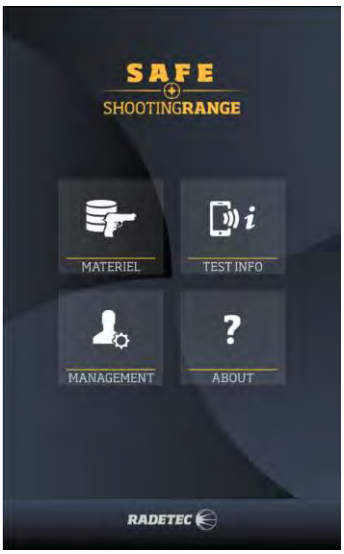
2.2. Lock Attached Components (LAC)

The purpose of the Lock Attached Component (LAC) is to enable or disable the *Fire Control Group* (FCG) regardless of the shooter´s actions on the firearm. If the fire control group is enabled the shooter cannot shoot and if it is disabled the user has the power to lock, unlock or shoot. The order can be generated remotely by means of an LRC controlled by the instructor, and automatically in case of errors, disconnections or incidents in the LAC itself.

Every secured firearm of the range must be equipped with a LAC device. This assembly is called *Secured Firearm with LAC*.

The LAC also provides with information about the firearm that can be read by smartphones with NFC thanks to the *Safe Shooting Range App*.

2.3. Configuration App



The configuration of the system is done through RADETEC's *Safe Shooting Range App,* with which LAC units are linked with the firearms and linked to the LRC remote control. This app is based on Android and requires of a smartphone with NFC to run.

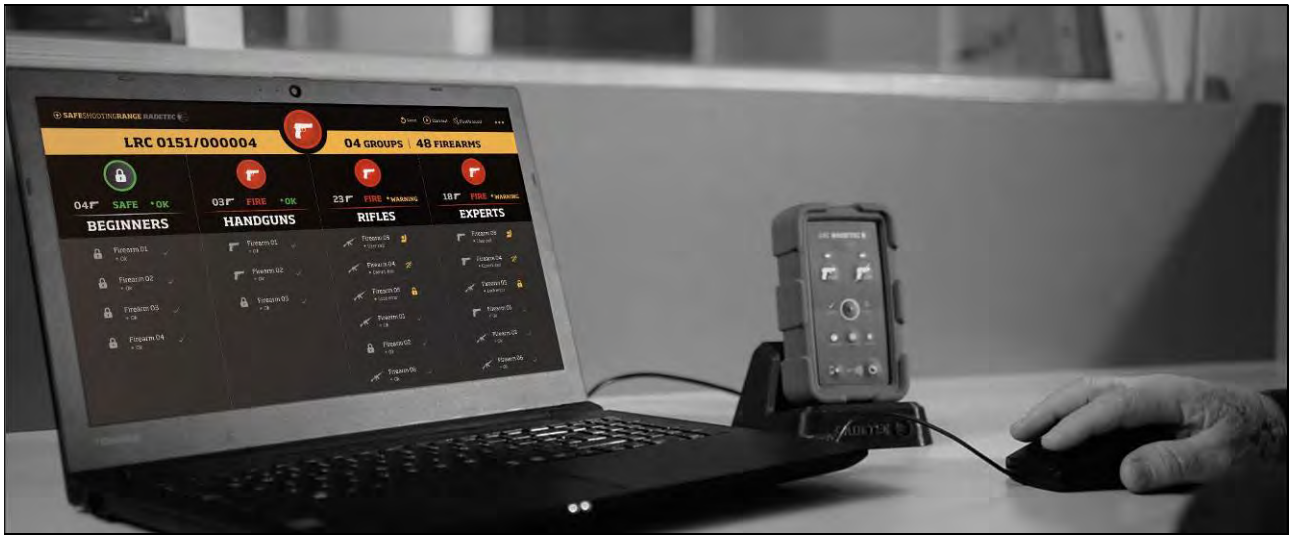
The application allows the instructor to make changes in the system before and after the exercise. Each change must be added to the LRC remote control and to the LAC units via NFC communication.

This App also can be used by the users of firearms, to know relevant information of these, bringing the mobile phone to the LAC.

2.4. SSR Management Software (PC)

The *SSR Management Software* allows the instructor to control the LAC devices at group level and provides detailed status information about them.

By the LRC dock, the instructor can connect the LRC remote control to a Windows[1] computer and manage all groups together or individually, getting visual and acoustic warnings and information, all in real time. It's a very useful tool for any instructor that requires of an aid in the control and information management during live fire exercises.



[1]This software requires of a Windows based PC with USB connection; Windows XP, Windows Vista, Windows 7, Windows 8 and Windows 10 are compatible versions.

3. Procedure to install and check compatibility

	**Always make sure that the weapon is unloaded, use safe procedures at all times during handling!** **Do not install other accessories if they can affect the operation of RADETEC devices.** **Assemble devices according to the steps described in this manual.**

This chapter establishes the way to install and check compatibility of the Safe Shooting Range (SSR) with a Fire Control Group (FCG) for the AR-15 platform.

This procedure must be performed every time the LAC or the FCG are installed.

 **PRIOR TO START**	Make sure your **Lower Receiver** has: Non-ambidextrous type. Enough space to install the LAC (no protuberances where the Lock Module is installed) 0.154 inches FCG pin size. (Small Pin Lower Receivers Only) Make sure your **Fire Control Group** has: Single Stage Mil-Standard If you are installing a LAC device with the *Shooting Lock Detection* upgrade, make sure your **AR15** has: - Picatinny rail MIL-STD-1913 / STANAG 2324

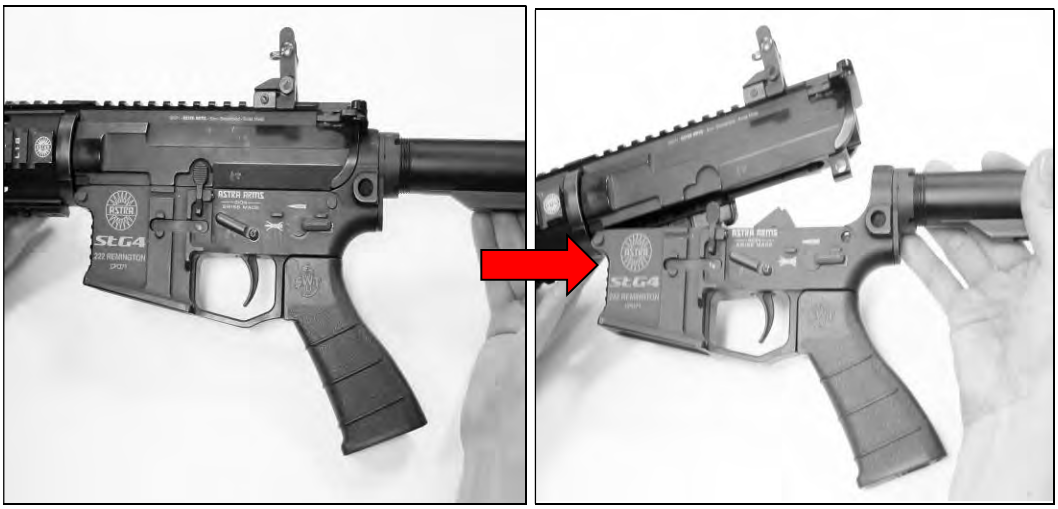
The compatibility has been evaluated for "Single Stage" trigger groups with standard AR15 trigger, with this type of FCG the Lock Attached Component (LAC) maintains its functionality. Make sure that your FCG is compatible, and the connection to the selector is adequate; to ensure proper operation of the system follow the steps shown below.

3.1. Materials required

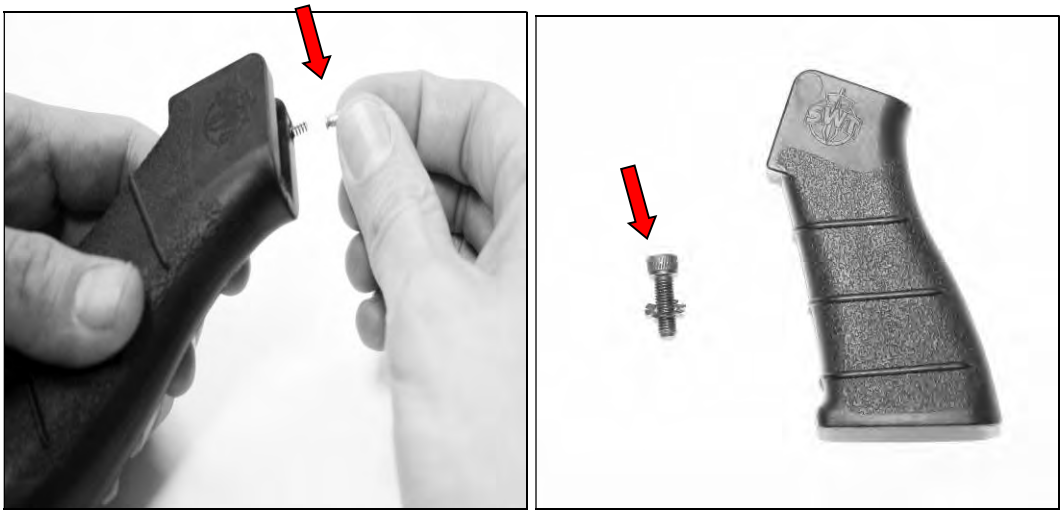
- Torx T8 Security screwdriver
- Spanner 8x25mm screwdriver
- ¼ Allen Key wrench
- LAC AR15, selector, washers and screws
- Compatible FCG (hammer, trigger, disconnector)
- Detent & Detent Spring

3.2. Disassemble the AR15

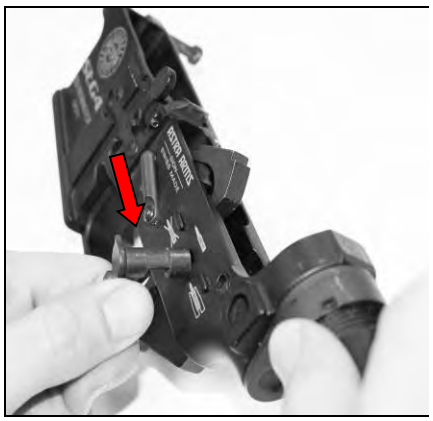
- Dismount the firearm prior to remove any part.



- Remove the original handgrip from the lower receiver, being careful to not lose the spring and selector detent.



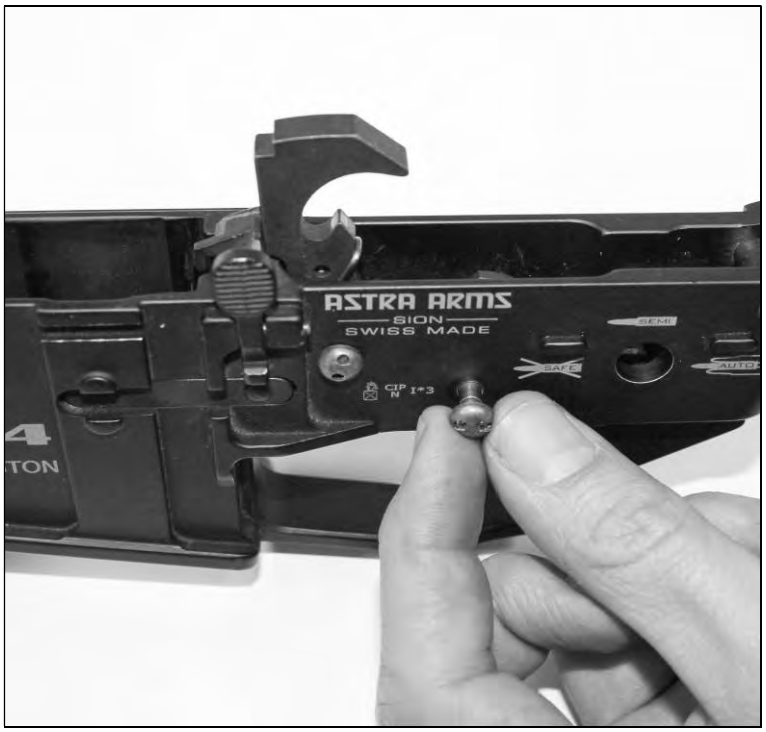
- Remove the original selector. Then tap out the hammer pin while holding the hammer, as it is under a little spring pressure; once the pin falls out remove the hammer.




- Thereupon, remove the trigger and disconnector of the lower receiver. Store all original parts for a future use.

3.3. Assemble the LAC to the AR15

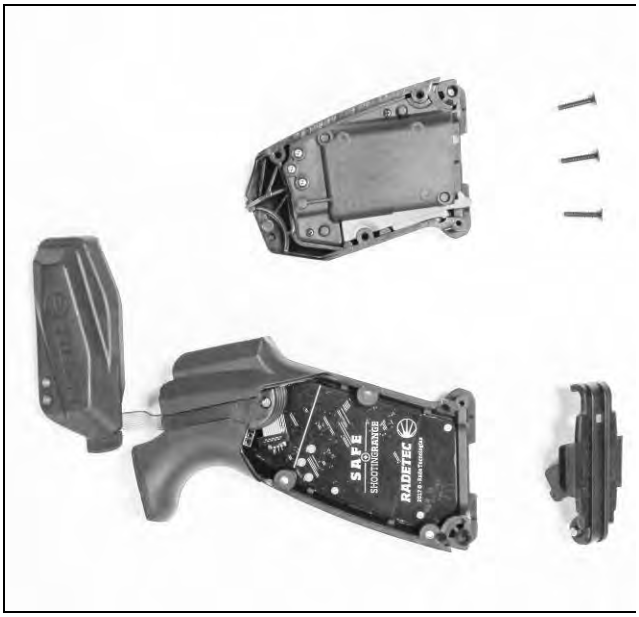
- Inside lower receiver align the trigger of a compatible FCG with the pin hole and introduce the spanner screw from the left side of the lower receiver to hold the piece.



- After the trigger of the compatible FCG is aligned, the hammer has to be mounted over and aligned to the pin hole. Then, hold the hammer with the other spanner screw from the left side of the lower receiver.

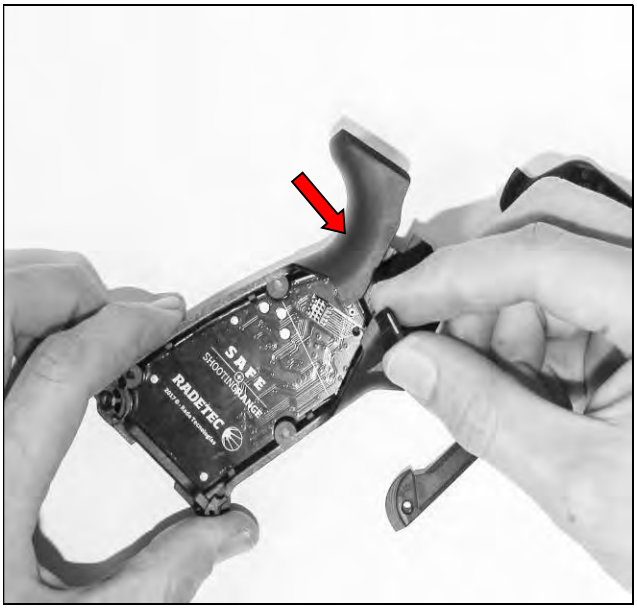
- Disassemble the LAC device with a Torx T8 Security screwdriver and disconnect the lock module.

Unscrew the cover



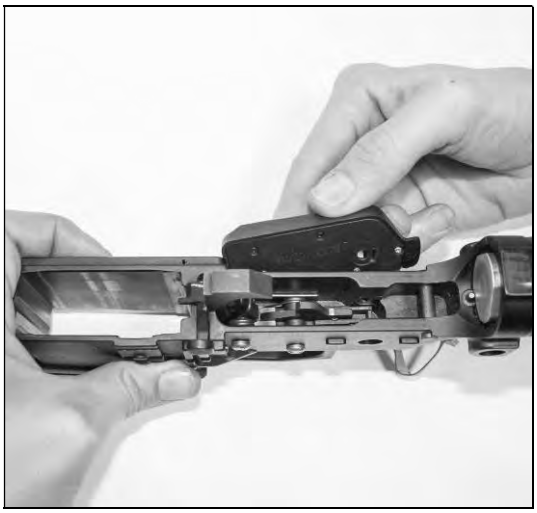
Dismantle the device

Remove the furrow lid



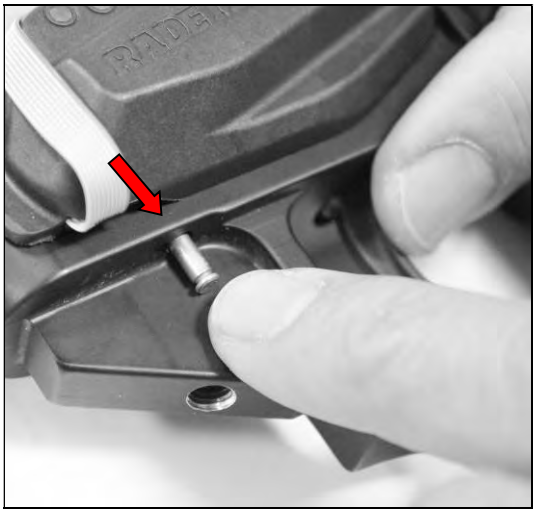
Disconnect the connector of the cable

- Place the lock module in the right side of the lower receiver aligning it with both spanner screws' ends. Be careful to leave the lock module flat cable freely stretched. Screw both spanner screws to the blocking unit.

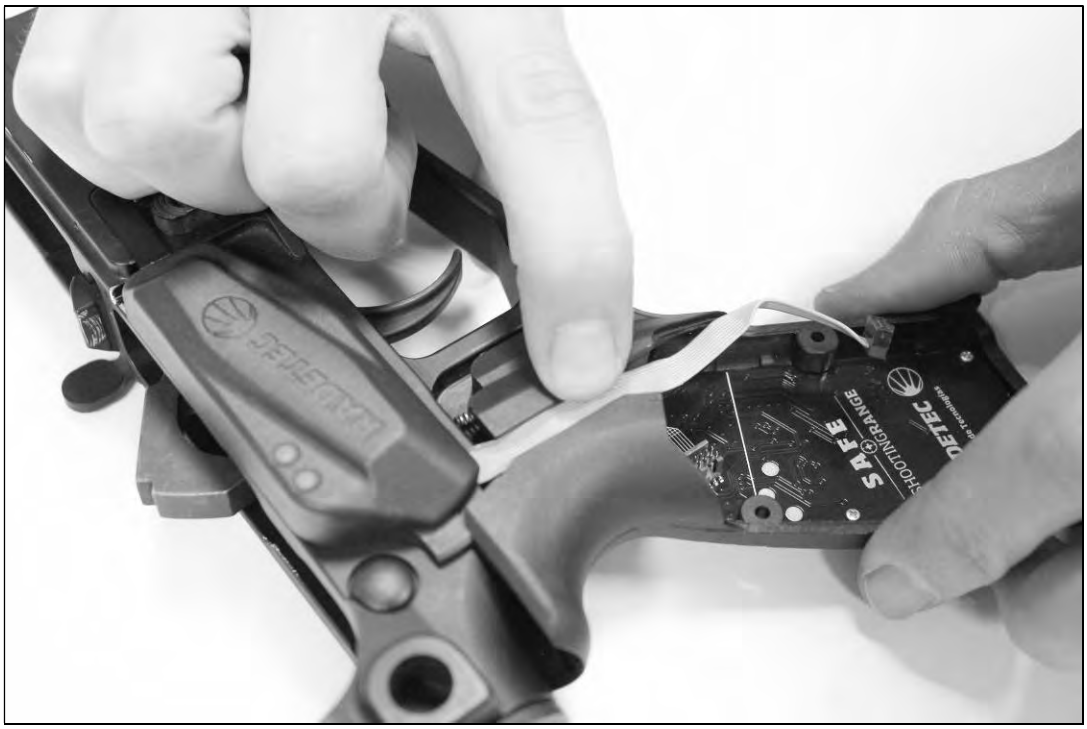


- Cock the hammer and put RADETEC's selector in the selector slot.

- In LAC's grip, there is a hollow space on the top side, introduce the spring previously removed in there and the selector detent in the respective hole of the lower receiver.



- Fit the grip in the lower receiver covering the lock module nail and pass the flat cable through the furrow.

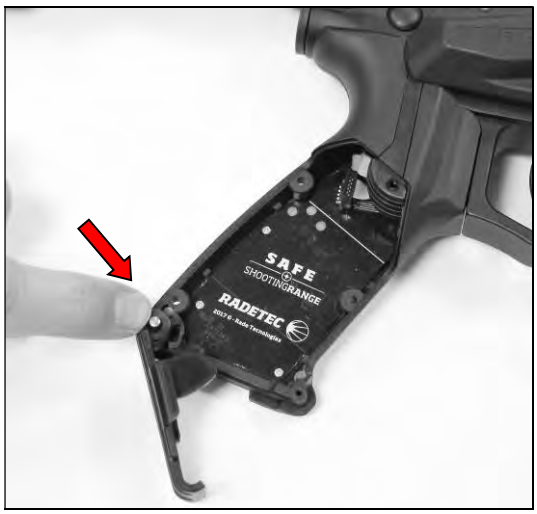


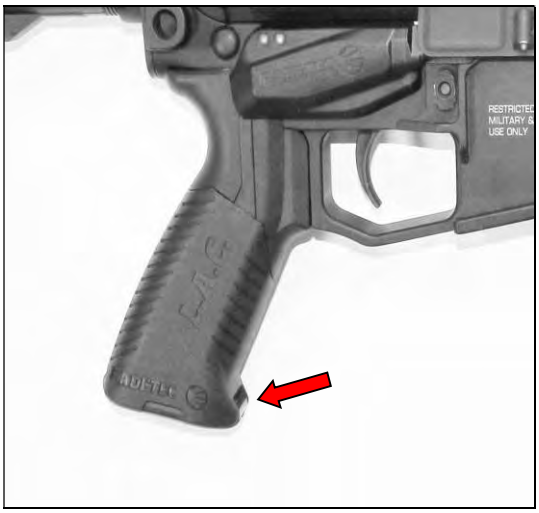
- Screw the LAC's grip with the ¼ Allen screw.

- Connect the flat cable to the PCB connector and slide the furrow lid.

- Place the battery cover in the grip's anchor point and fit the grip cover in from below in order to ease that all parts can be reassembled together again. Close the battery cover and screw the grip's cover to the grip's frame.

-





3.4. Change of Batteries

	**Replace batteries only with original factory batteries.** **Recharge the batteries only with original factory battery chargers.** **Respect times and instructions for charging batteries.** **Respect the polarity when inserting the battery (battery arrow towards the LAC nail).** **Replace any battery if it shows apparent defects.**

Apply some pressure to front side

Open the battery cover

Check polarity. Introduce the battery with the sign facing the blocking pin

Close the battery cover or the device will not be initialized

The device will light the green LED right after the battery is plugged

To remove the battery, open the cover and press the blocking pin

4. Configuration App (Smartphone)

4.1. To determine the NFC area of all devices

NFC: SMARTPHONE

The smartphone´s area where the NFC antenna is located generally corresponds to the central area of the rear part. Although it varies depending of the brand and model of the smartphone.

Please, review the user´s manual of the smartphone to locate the NFC antenna

NFC: LAC

The NFC antenna is on grip´s left side, on the -NFC- mark.

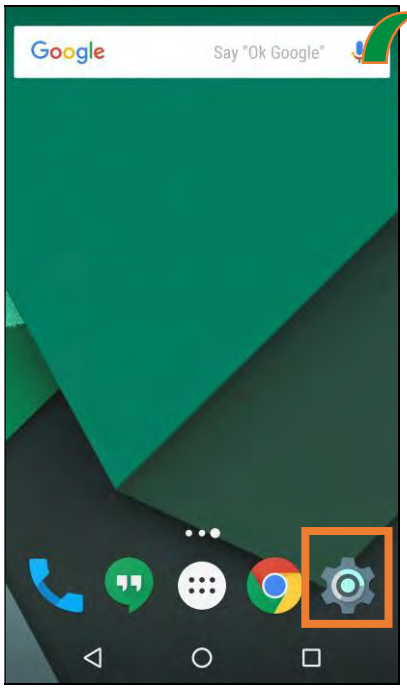
To synchronize the smartphone with the LAC, make sure that the area covered by the NFC antenna of the smartphone coincides with the area of the LAC where the -NFC- mark is located.

NFC: LRC REMOTE CONTROL

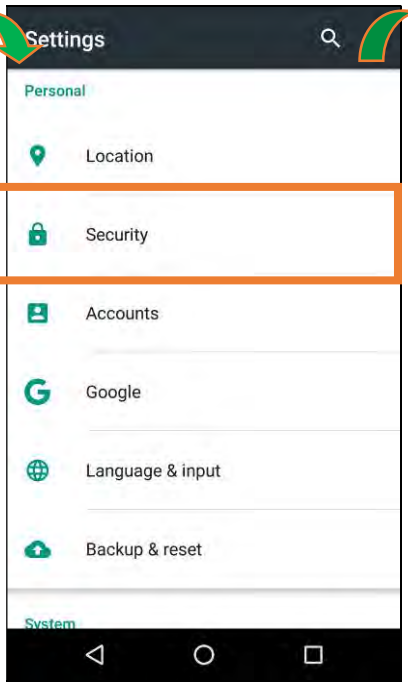
The NFC antenna is located on the upper front of the LRC. To synchronize the smartphone with the LRC, make sure that the area covered by the NFC antenna of the smartphone coincides with the area of the LRC that is shown in the image.

4.2. To install the app on Android System

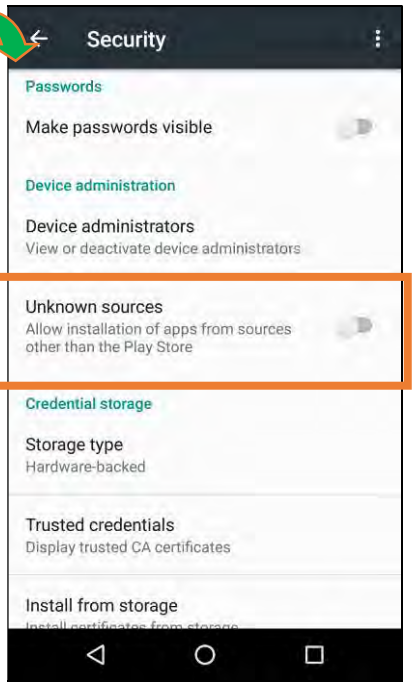
This app requires of an Android smartphone (version 5.1.1 and later) with NFC.



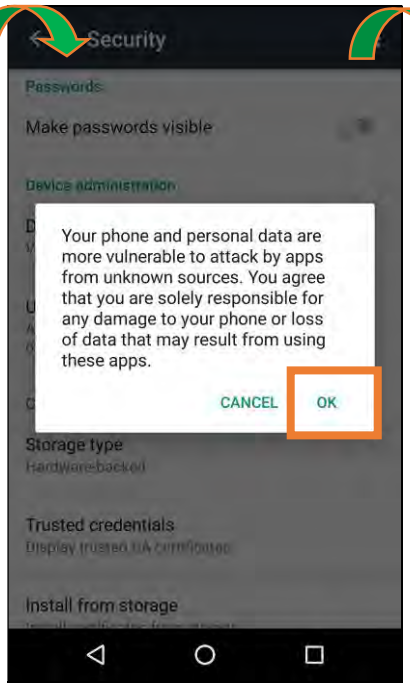
From the home screen select **Settings**



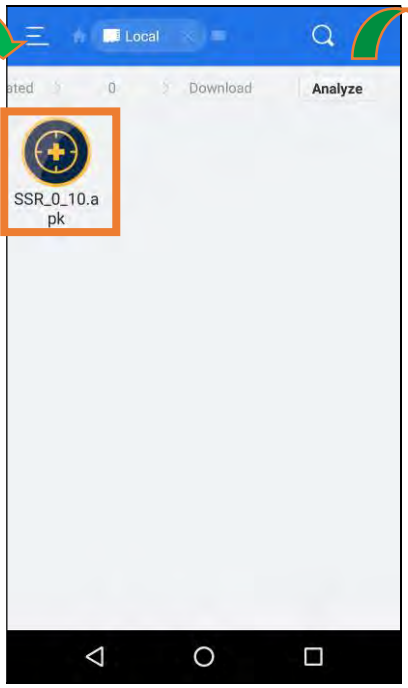
From the settings select **Security**



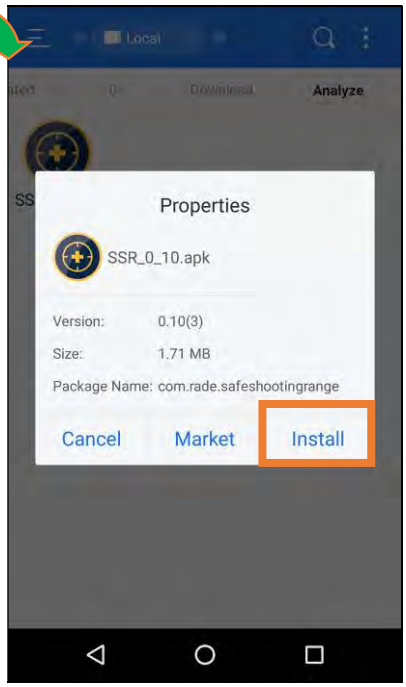
Select **Unknown Sources** option



In the pop-up window press **OK**

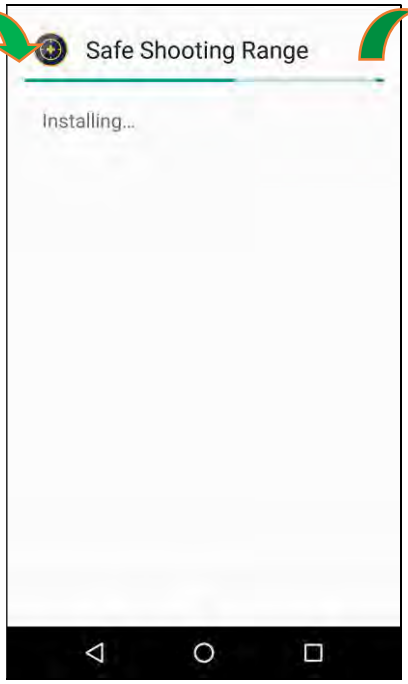


Once the installation parameters are set, locate the installer file and select it

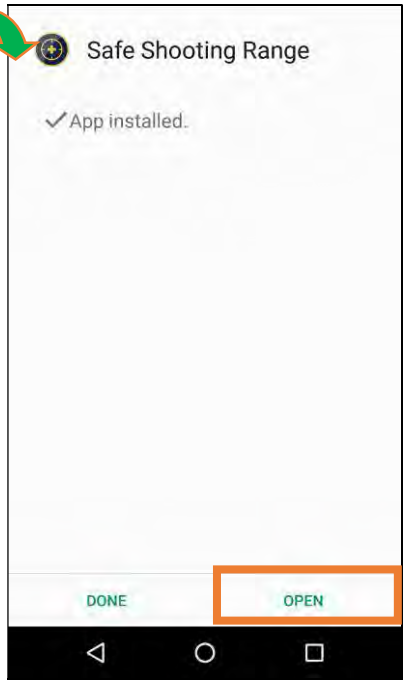


Click on the installer file and select **Install**

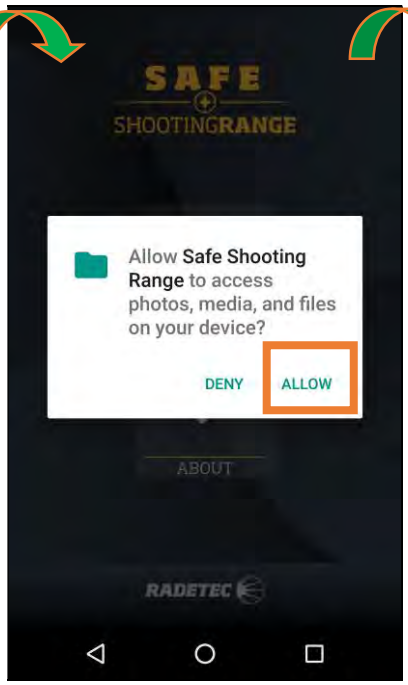
Confirm the installation



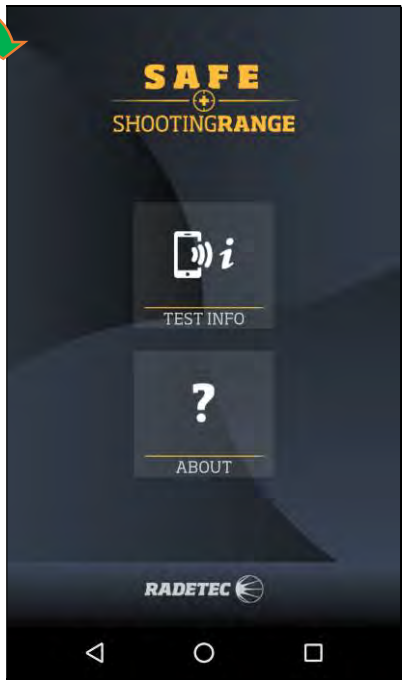
Installing



Once the installation is finished press **Open**



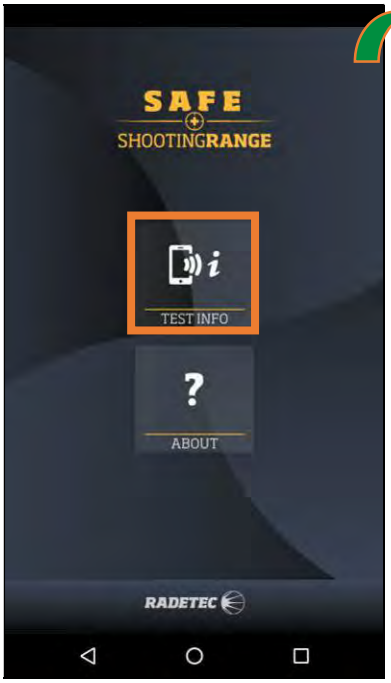
App window pops up automatically. Press **Allow**



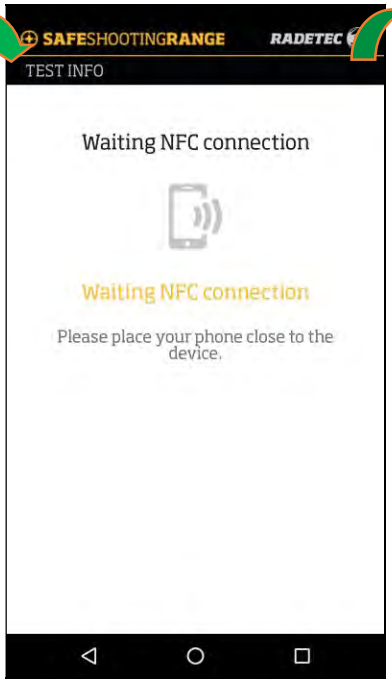
The main screen is shown. The app is ready to be used

4.3. To start a configuration session in an LRC

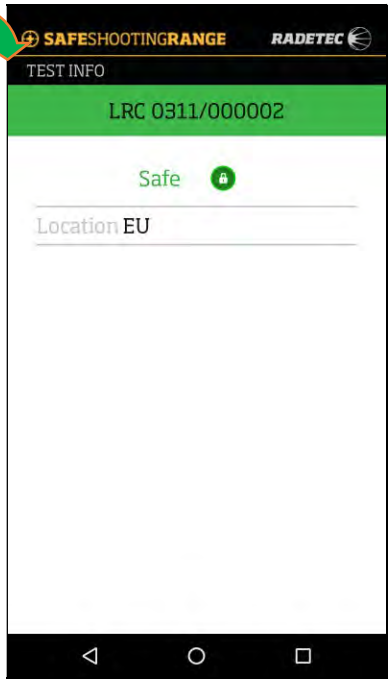
To be able to work with the App you have to authenticate yourself with the specific LRC remote control with which you are going to work. To do this, start the application, access the option “Test info” and bring the smartphone to the LRC remote control.



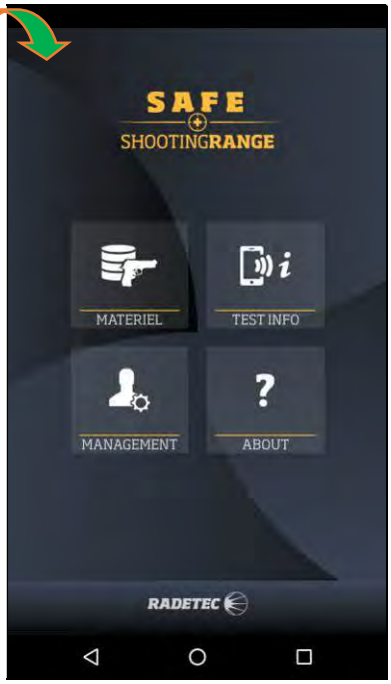
The configuration access is not initialized and 2 options are displayed. Press **Test Info**



Place the NFC sensor of the smartphone over the LRC



It displays LRC information. Return to main screen

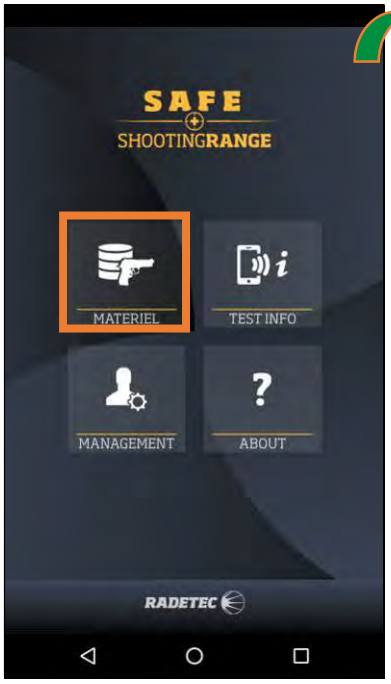


The configuration access is now initialized and 4 options are displayed

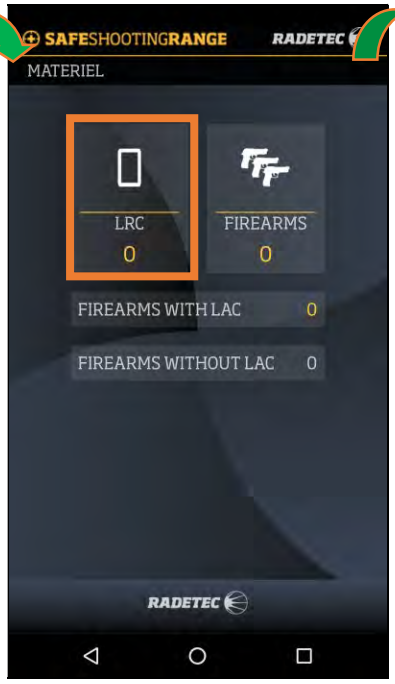
As a security measure, to avoid uncontrolled access to the database of the application, the session access expires every 30 minutes forcing to sync again the smartphone with the LRC. To do this, bring the smartphone close to the LRC´s NFC antenna and follow the instructions.

4.4. LRC remote control actions: Create an LRC

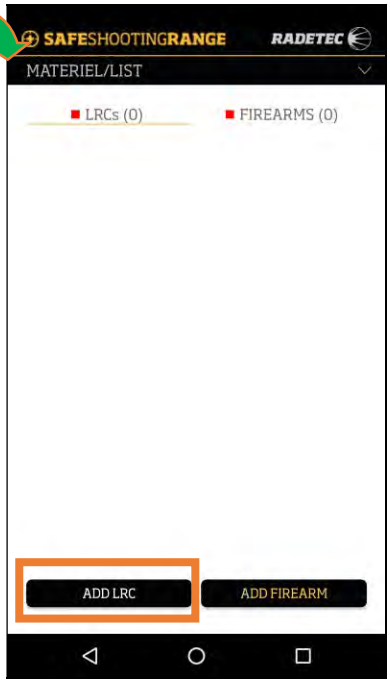
In the Application, register an LRC remote control with which the firearms secured with LAC devices will be controlled. It is mandatory that all fields are completed (except the “Notes” field)



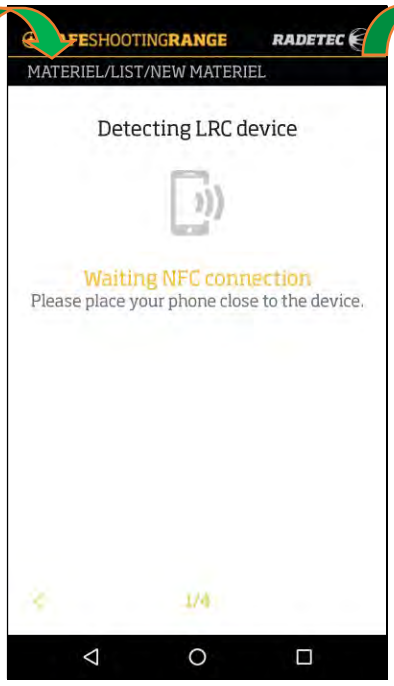
From the home screen select **Materiel**



Select **Security** icon

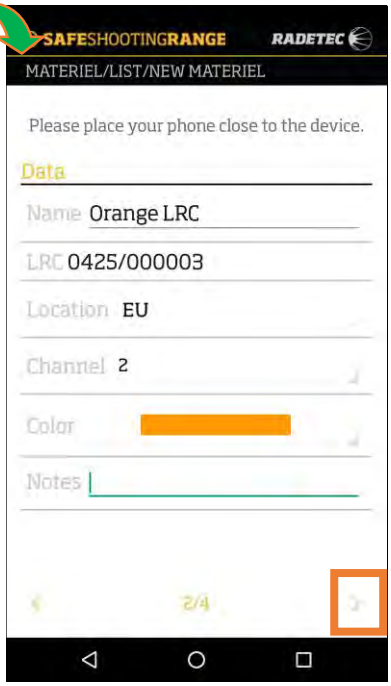


Select **Add LRC**

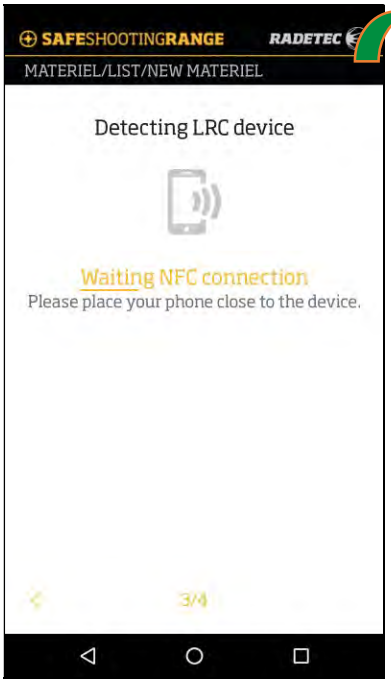


Place the smartphone over the LRC remote control

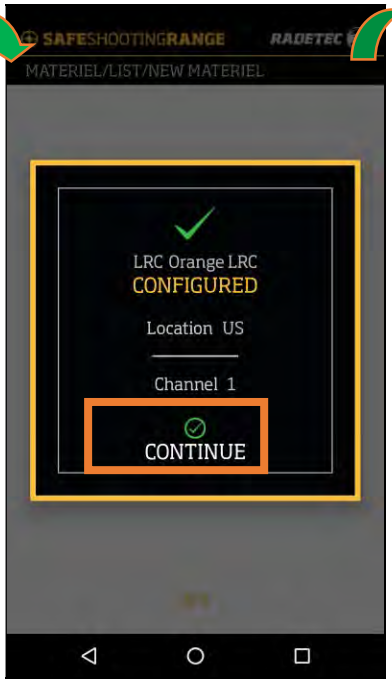
The App displays the LRC editing screen



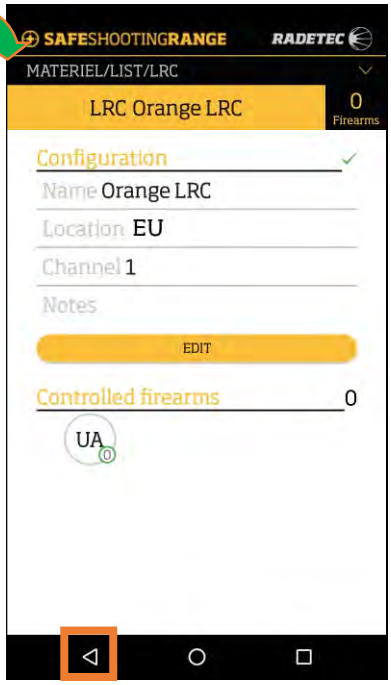
Fill the fields out and select continue



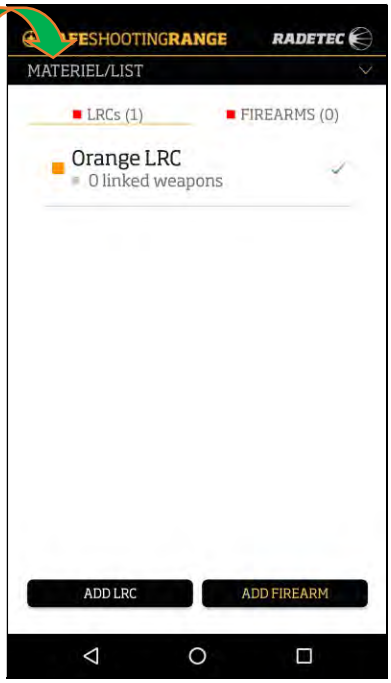
Place the NFC sensor of the smartphone over the LRC



Select the **Continue** button to finish the process



The App informs a new LRC is created. Select return



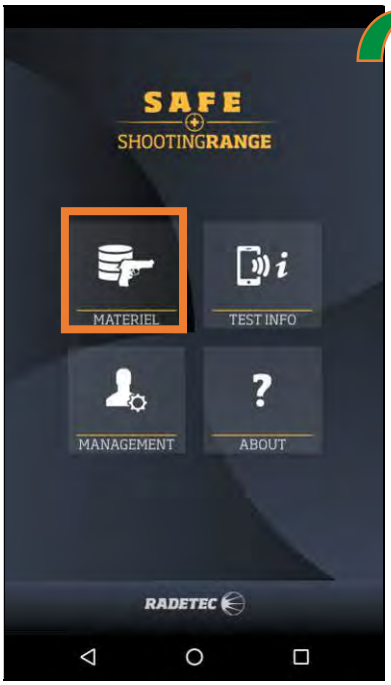
The list of registered LRC remote controls is displayed

4.5. LRC remote control actions: Edit an LRC

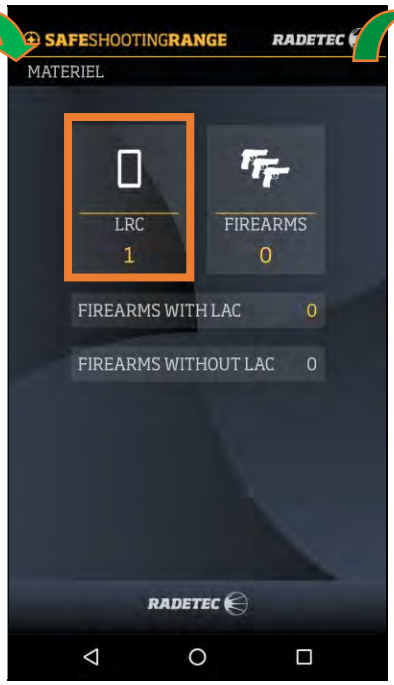
Modify the existing information in an LRC remote control in the application.

When you modify the name of the LRC remote control, or the “Notes” field, the application will only request to communicate with the LRC remote control.

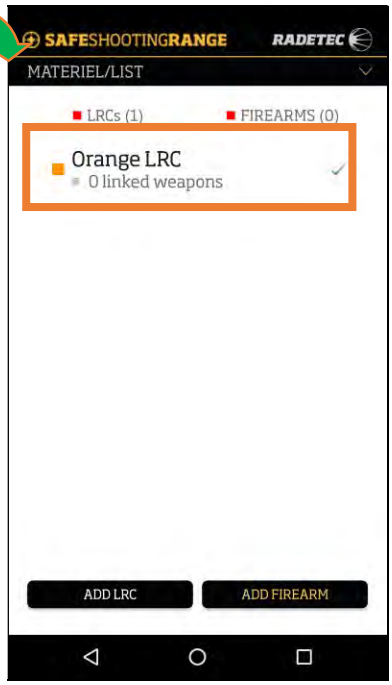
In case of changing the channel with which the LRC remote control communicates with the LAC devices, communication with both the LRC and the devices linked to it will be necessary. To do this proceed with the smartphone as explained below.



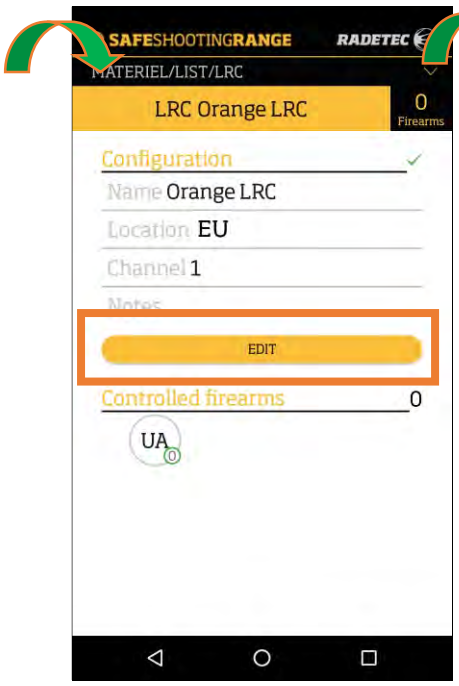
From the main screen select **Materiel** option



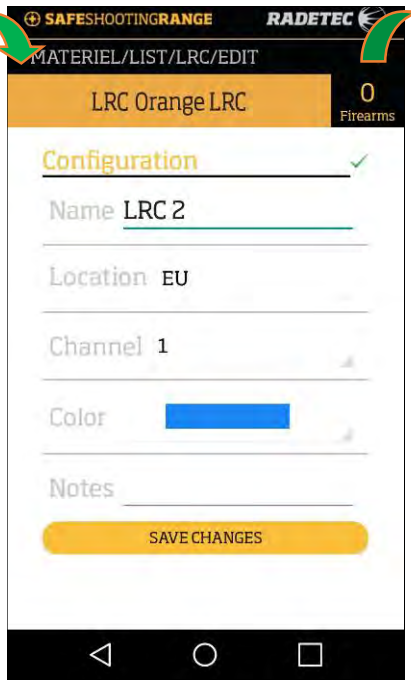
Select the **LRC** option



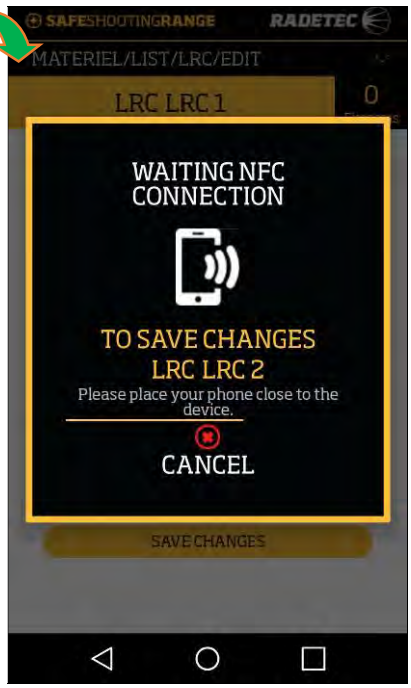
Select the LRC to edit



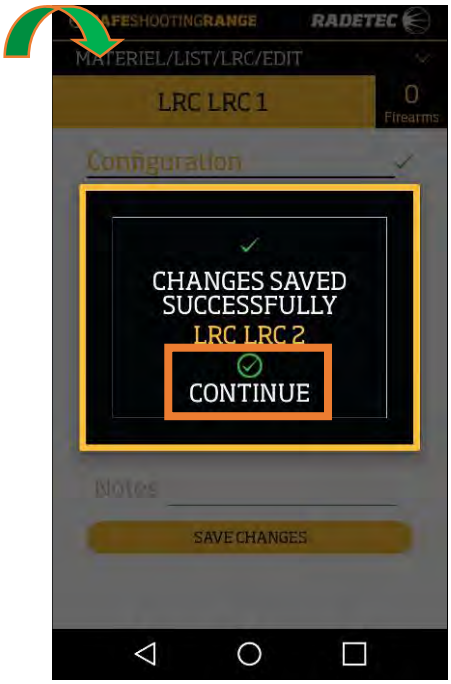
The properties of the LRC are displayed. Select **Edit** option



Modify the necessary data



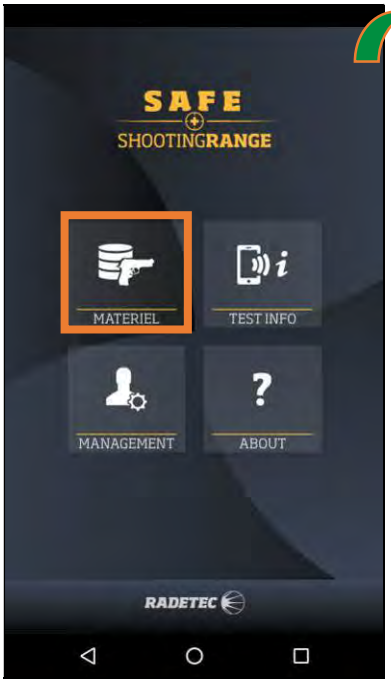
Place the NFC sensor of the smartphone over the LRC



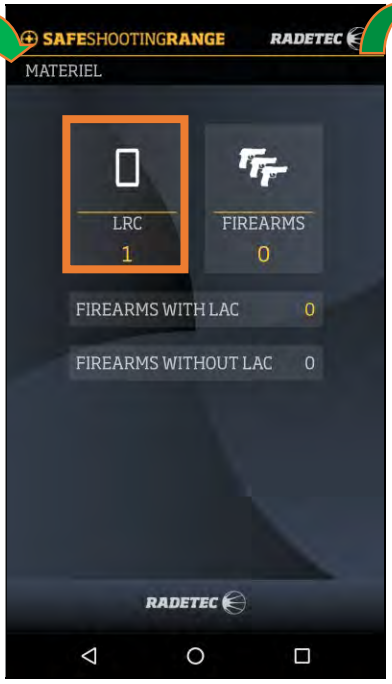
Select **Continue** button to end the process

4.6. LRC remote control actions: Remove an LRC

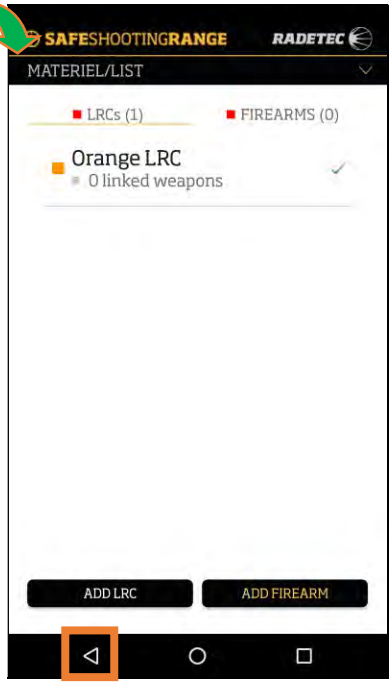
Remove an LRC remote control from the application. This order can only be carried out when the LRC remote control does not have firearms secured with linked LAC devices.



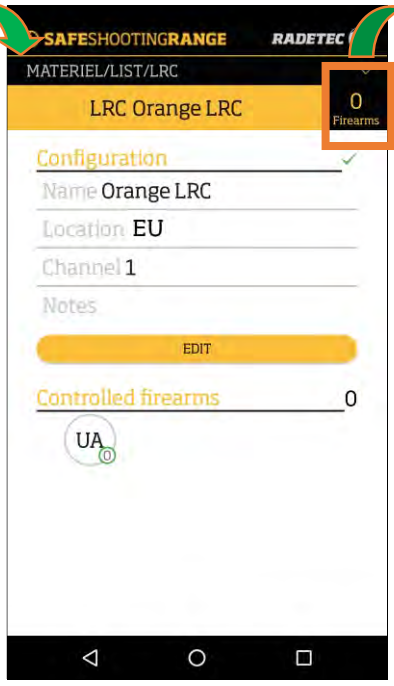
From the home screen select **Materiel** option



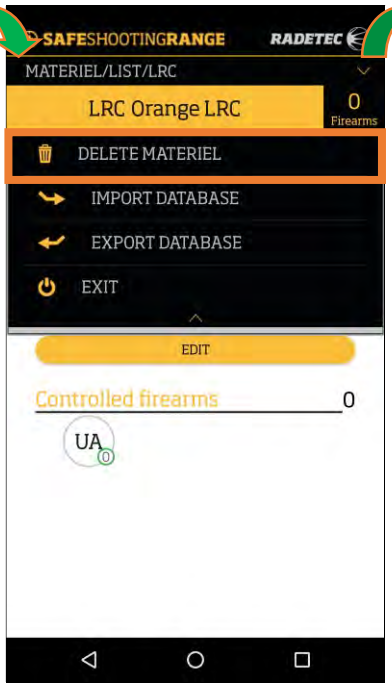
Select **LRC** option



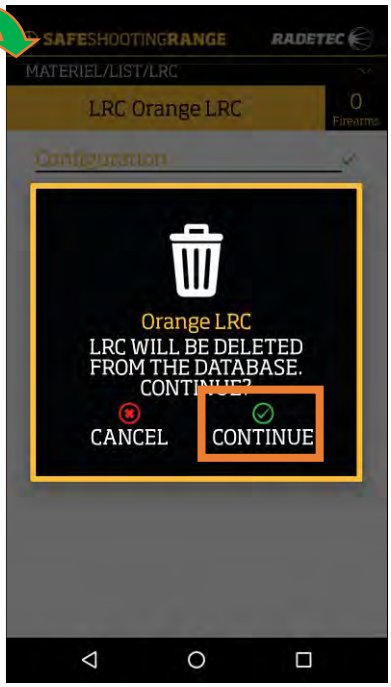
Select the LRC will be removed from the system



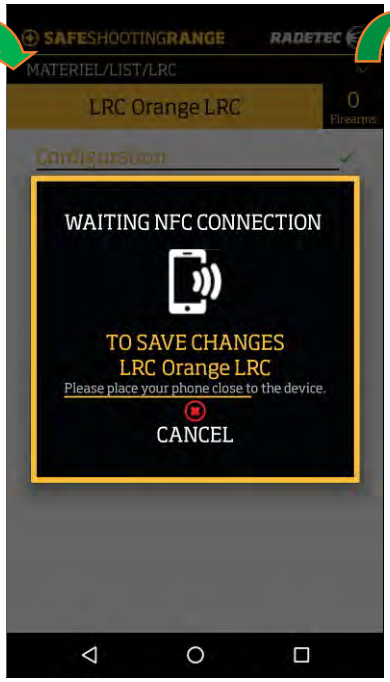
The properties of the LRC are displayed. Press **Option** button in the upper right corner



In the drop-down menu select **Delete Materiel** option



Select **Continue** button of the pop-up message displayed

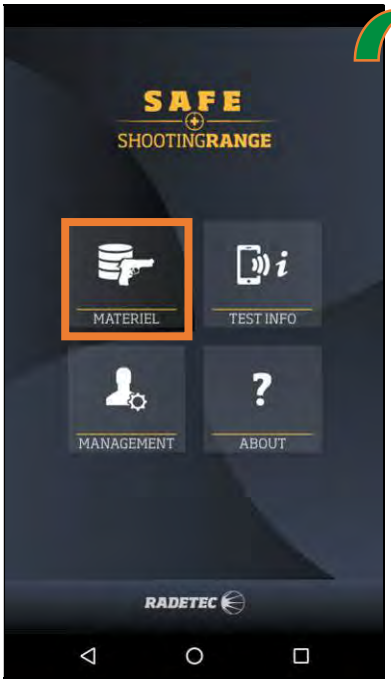


Place the NFC sensor of the smartphone over the LRC

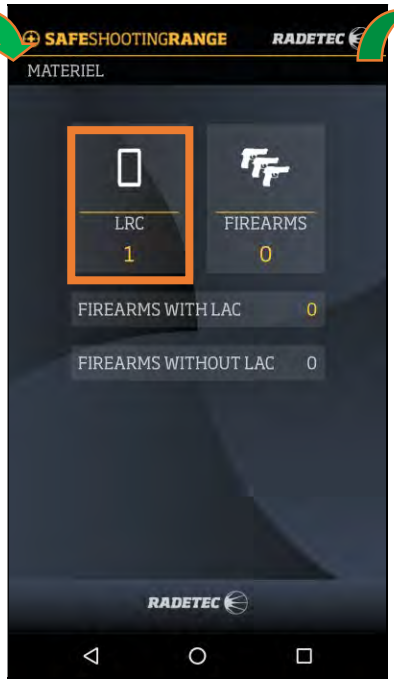
The App returns to **Materiel/List** and the removed LRC is not displayed

4.7. Actions with firearms: Create a firearm

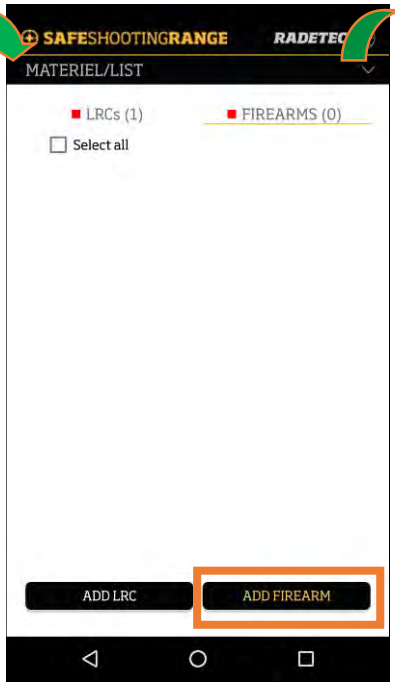
Register a firearm in the application. It is mandatory that all fields are filled out (except “NOTES”)



From the main screen select **Materiel** option

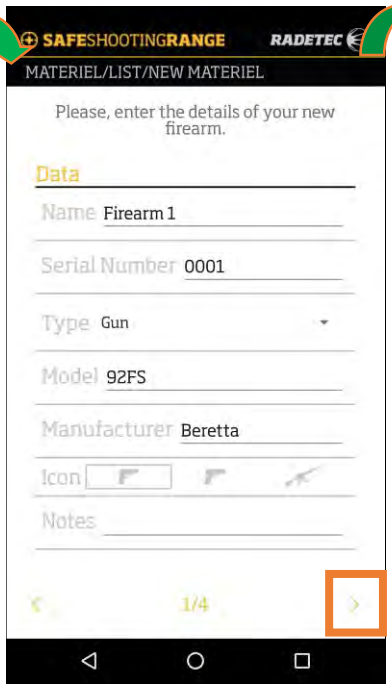


Select **Firearms** option

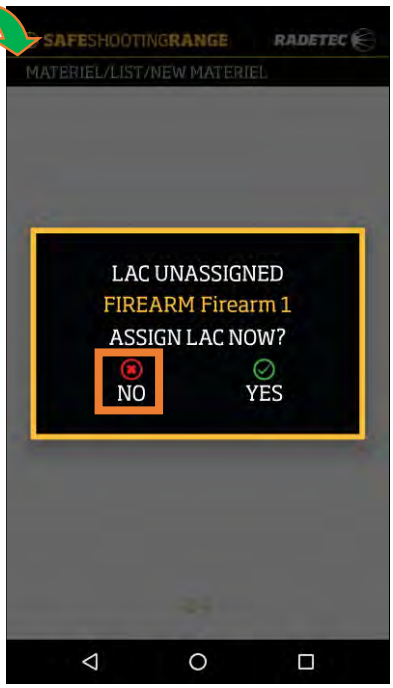


Select **Add Firearm**

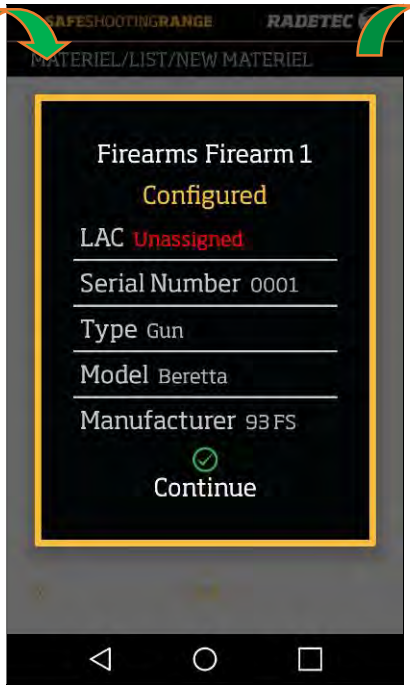
Fill the requested fields out



Once filled out continue with the process



Select **No** to assign a LAC to the new firearm

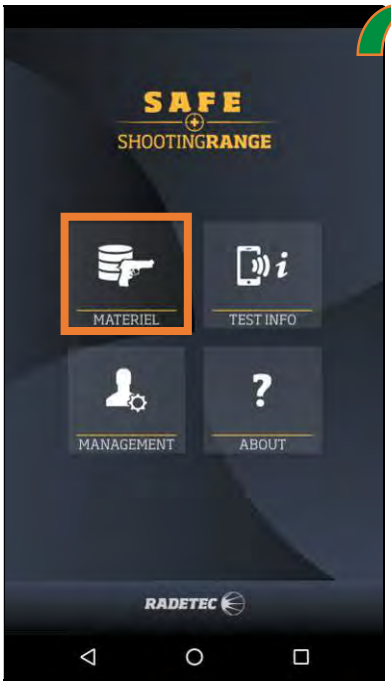


The App reports the new firearm created. Select **Continue** option

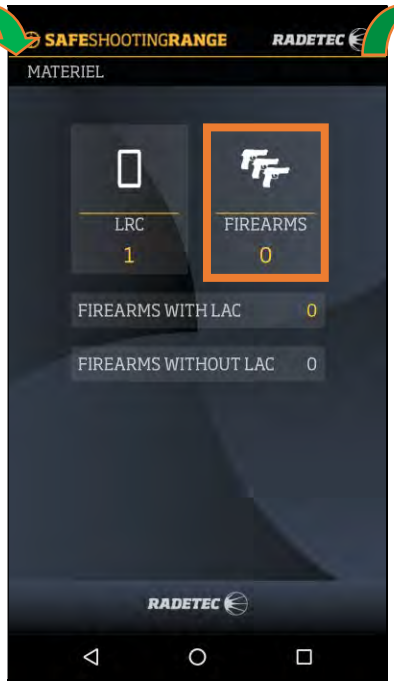
The new firearm is registered in **the Out of System** status in the list of firearms

4.8. Actions with firearms: Create a firearm and link a LAC

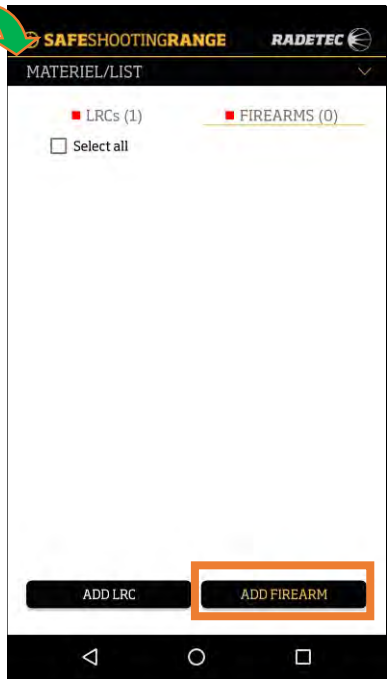
Register a secured firearm with LAC device in the application. It is mandatory that all fields are filled out (except “NOTES”)



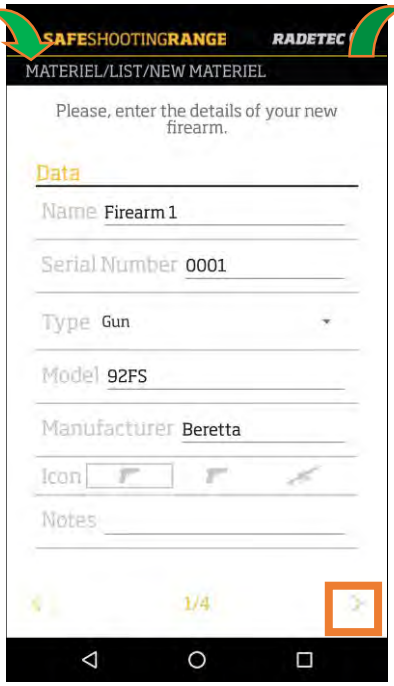
From the home screen select **Materiel** option



Select **LRC** option

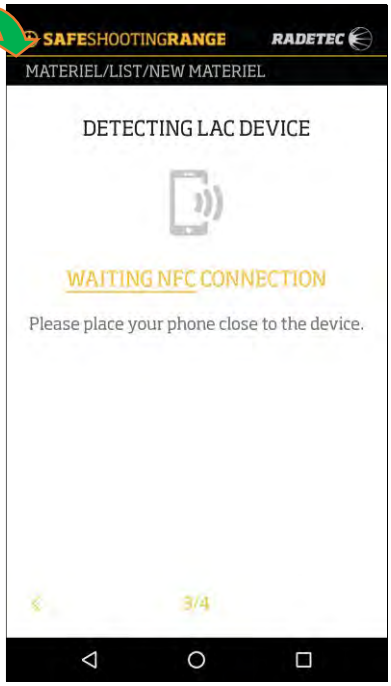


Select **Add Firearm**



Fill the requested fields out and continue

Select **Yes** option to assign a LAC to the new firearm



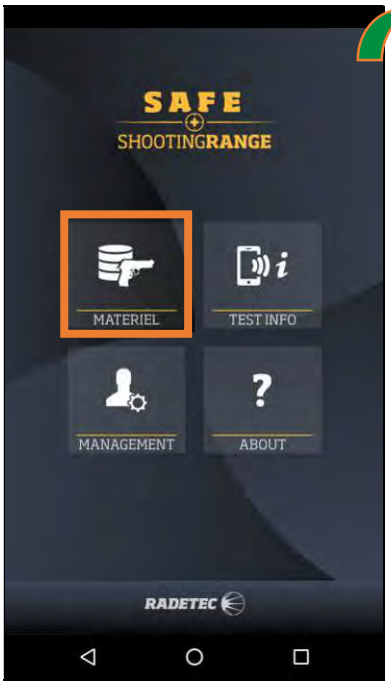
Place the NFC sensor of the smartphone over the LAC

The App reports the new firearm has been created. Select **Continue**

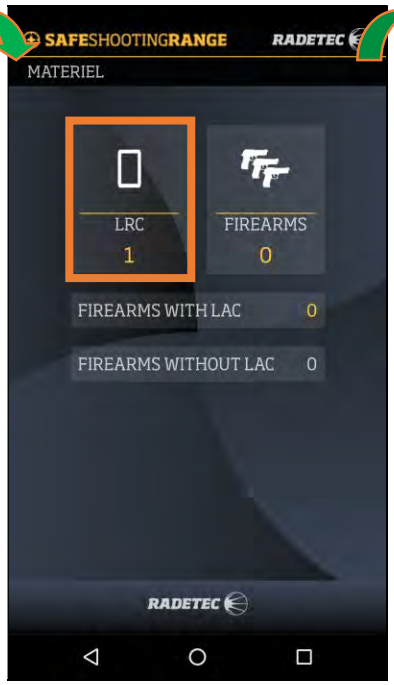
The new firearm is registered as linked in the list of firearm

4.9. Actions with firearms: Link a LAC with an existing firearm

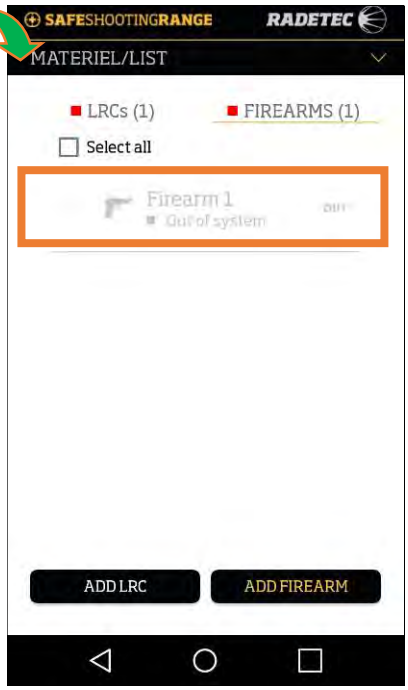
Relate a LAC device installed in a firearm to ensure its control.



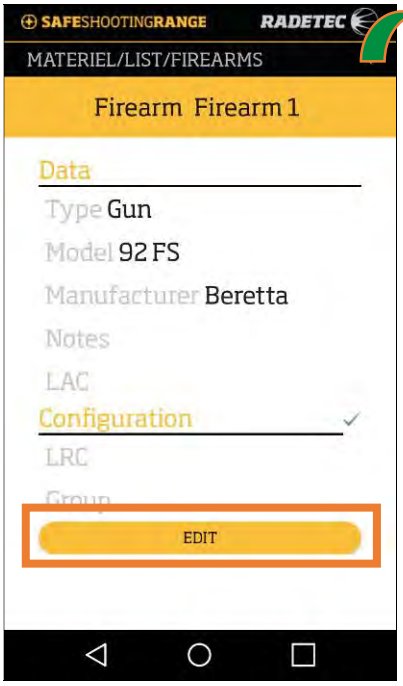
From the main screen select **Materiel** option



Select **Firearms** option

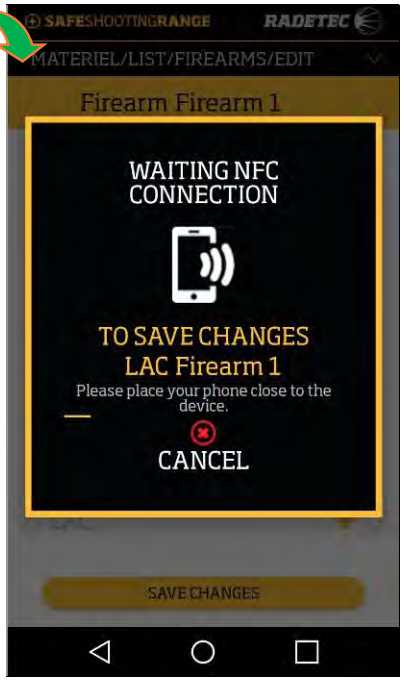


Select the firearm

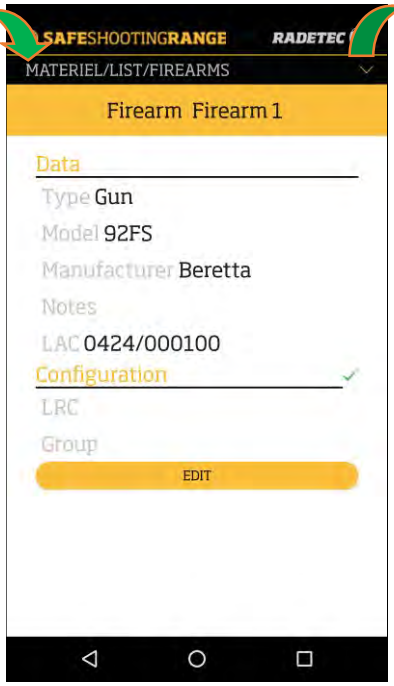


Select **Edit**

Scroll down and select the link icon



Place the NFC sensor of the smartphone over the LRC

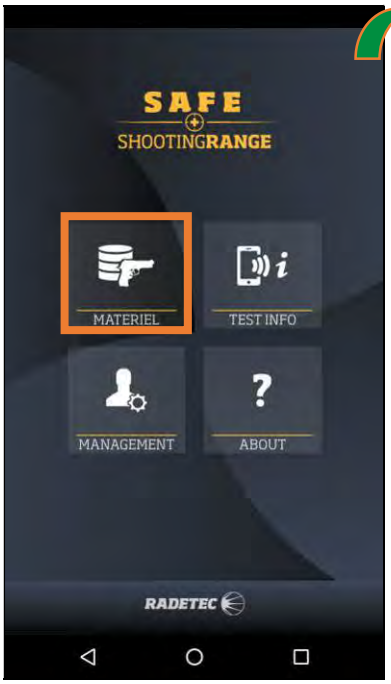


The ID of the linked LAC is displayed

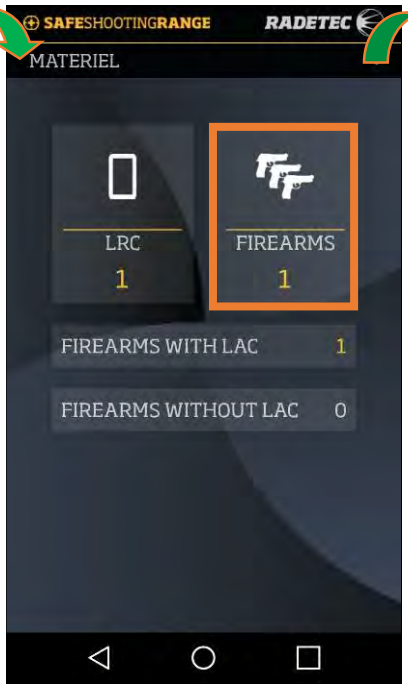
The secured firearm with LAC is displayed

4.10. Actions with firearms: Unlink a LAC with an existing firearm

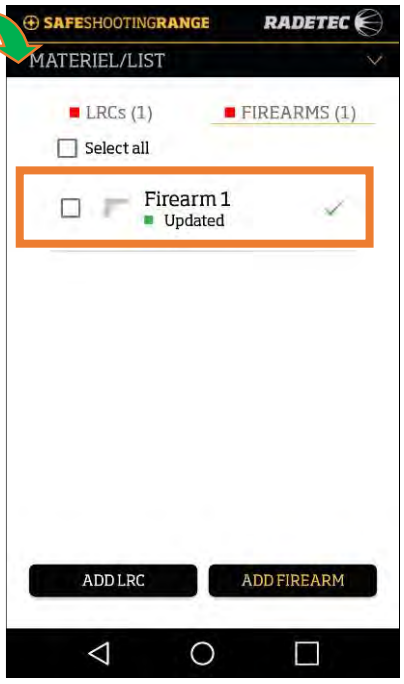
Remove the relation between a LAC device and the firearm. The firearm will be no longer secured.



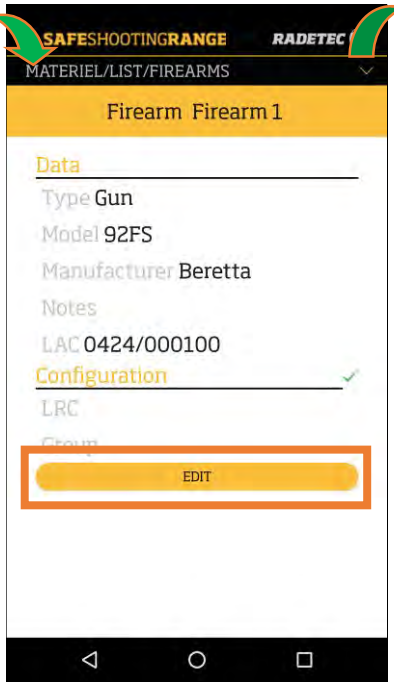
From the home screen select **Materiel** option



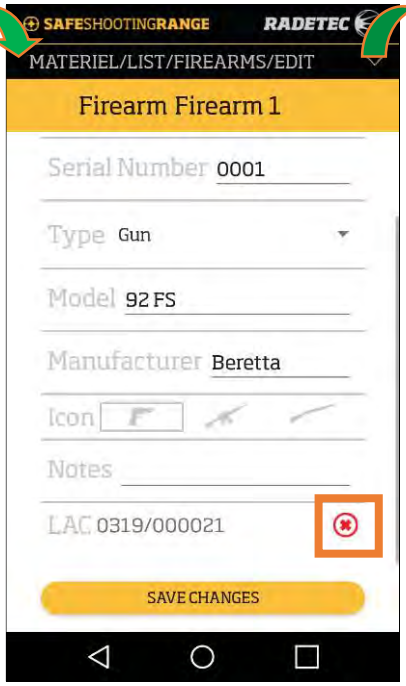
Select **Firearms** option



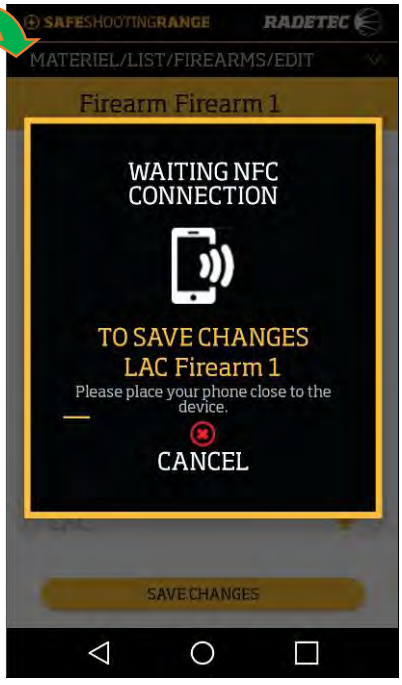
Select the secured firearm to be unlinked



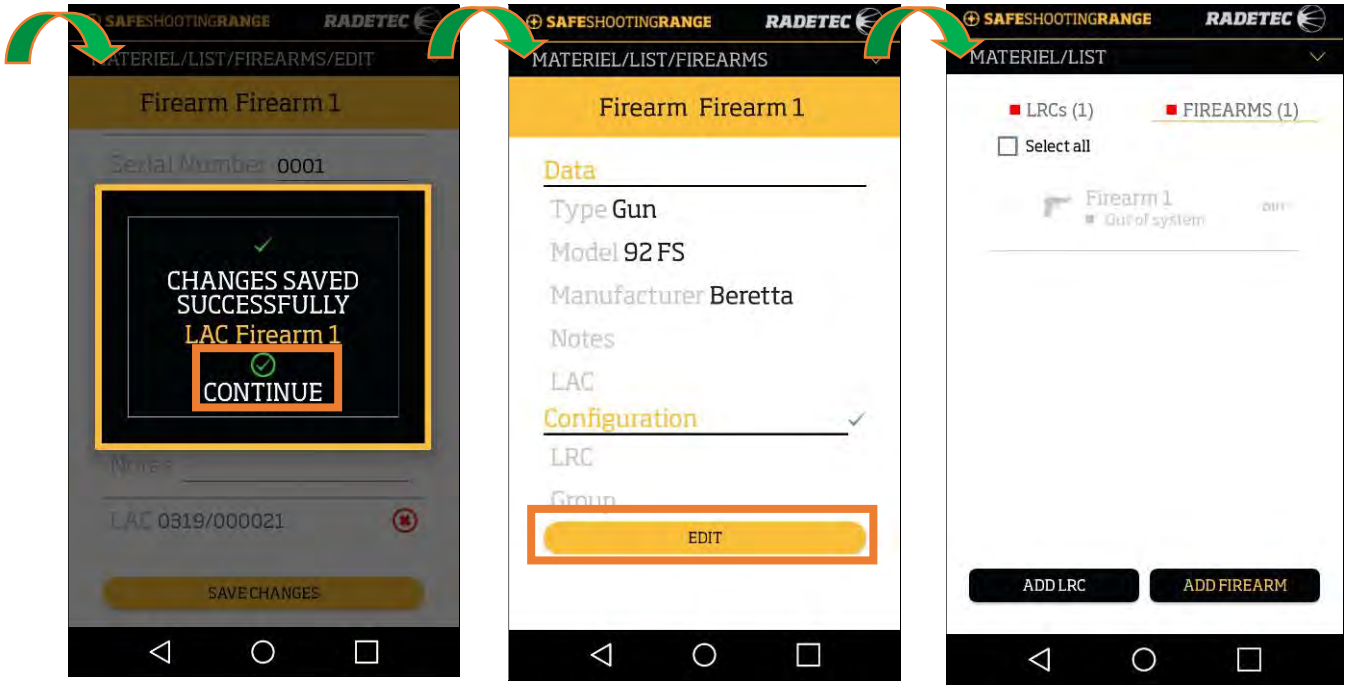
Select **Edit**



Select **Unlink** button



Place the NFC sensor of the smartphone over the LAC

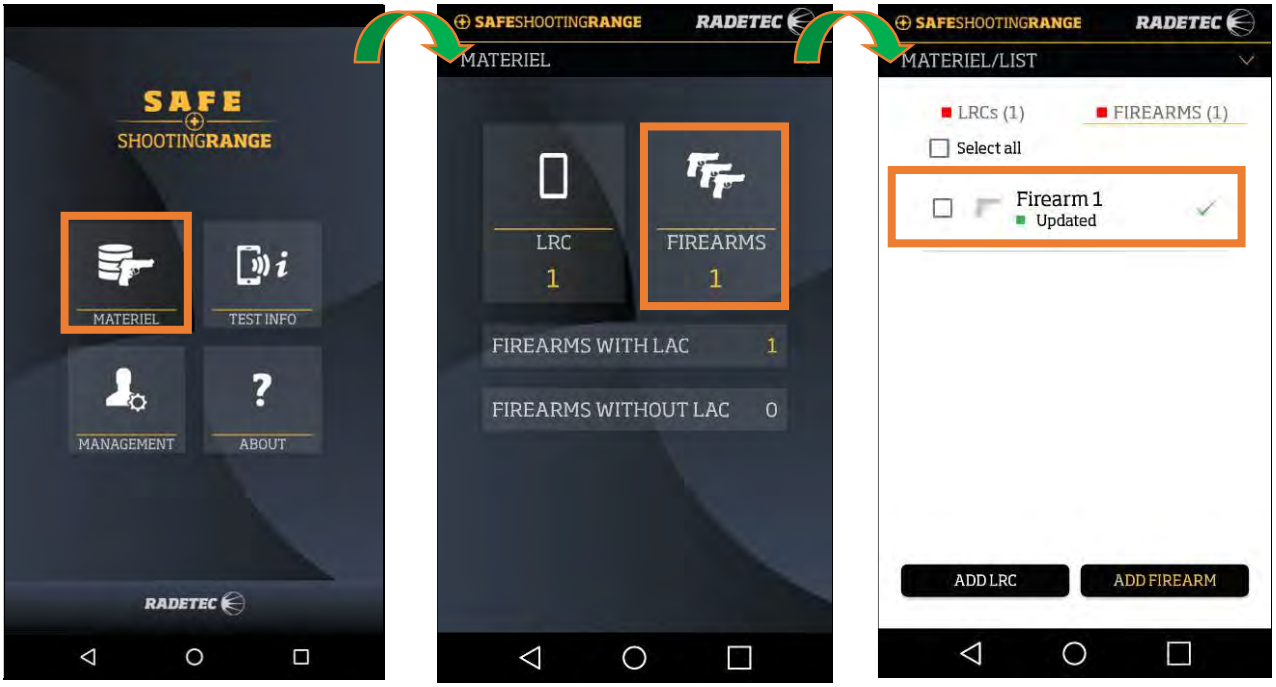


Select **Continue**

The unlinked firearm of the LAC is displayed

The firearm is **Out of System**

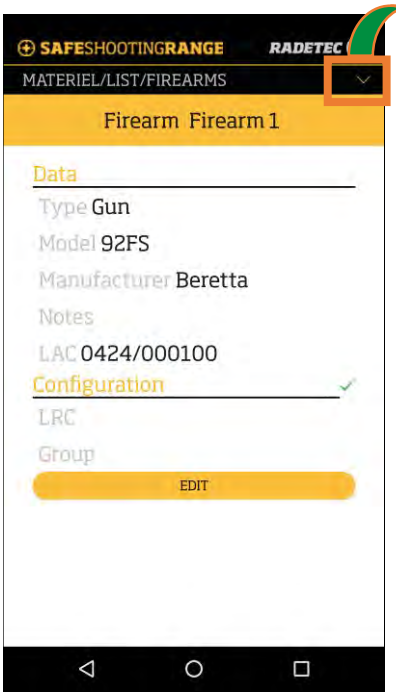
4.11. Actions with firearms: Remove a firearm with LAC



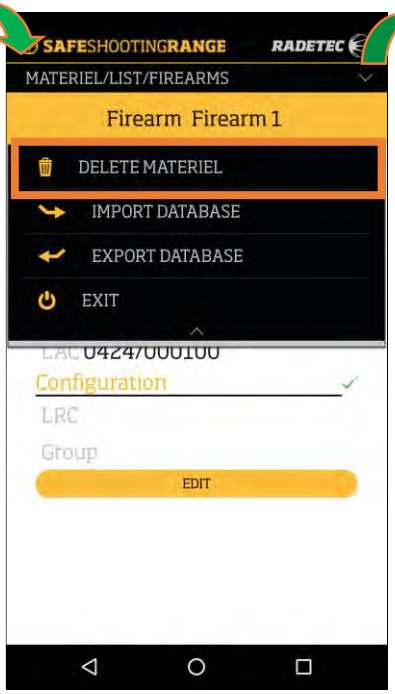
From the home screen select **Materiel** option

Select **Firearms** option

Select the secured firearm to be removed

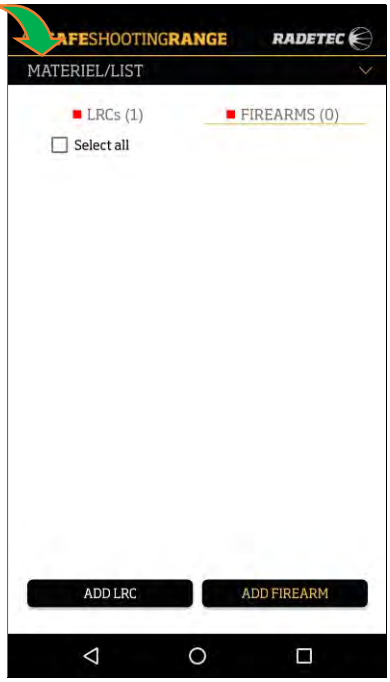


Select the **Option** button in the upper right corner

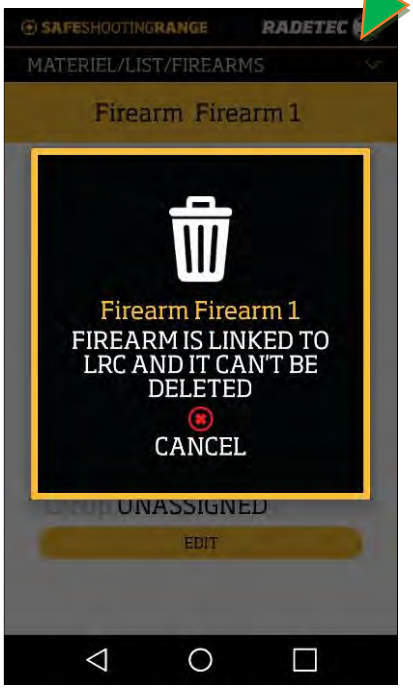


Select **Delete Materiel**

Select **Continue**



The firearm disappears from the list of firearms



If this pop-up window is displayed you must unlink the secured firearm with LAC from the LRC remote control previously in order to erase it.

Section 05.13

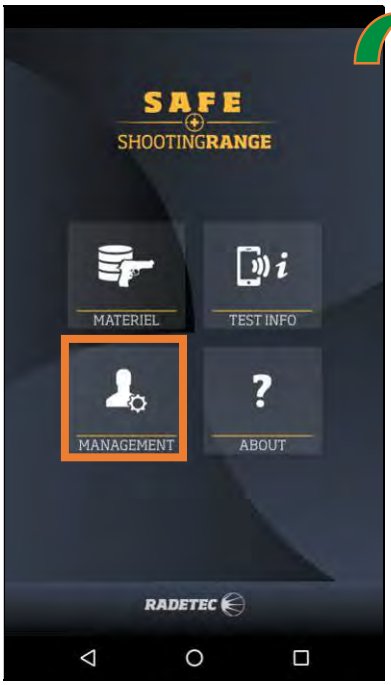
This option can only be carried out in case the firearm is not linked to any LRC remote control. The firearm will be removed, is linked with a LAC device or not.

4.12. Actions with firearms: Link a firearm with LAC to an LRC

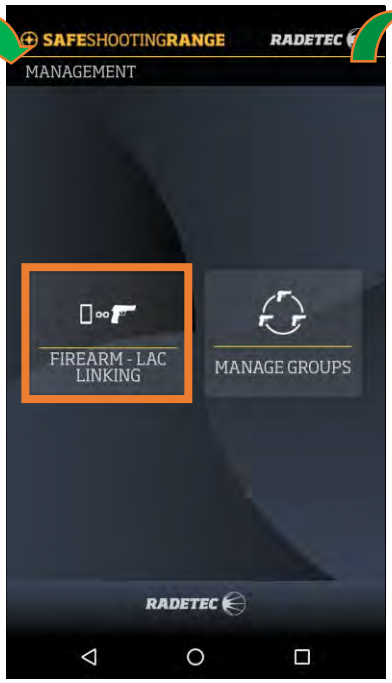
Relate secured firearms with LAC device to a LRC remote control

The linked firearm will be displayed by default in the unassigned group.

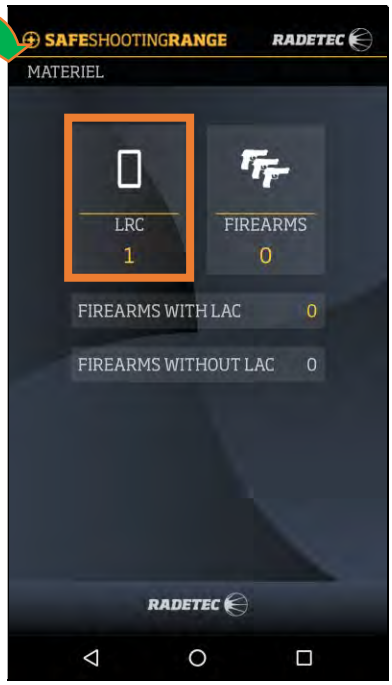
Since that moment, the firearms that are in the work session will only be able to fire when the LRC remote control transmits the unlocking signal.



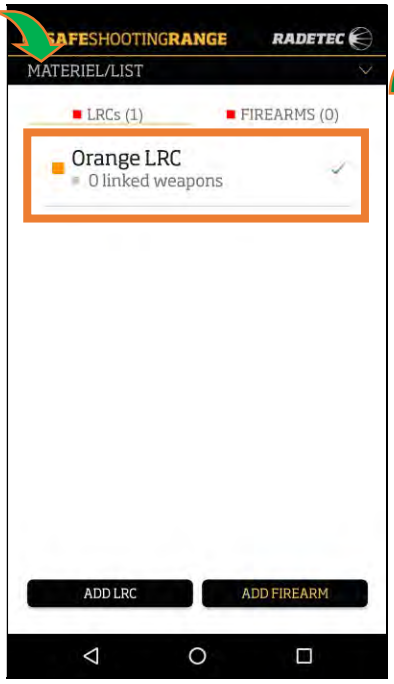
From the main screen select **Management** option



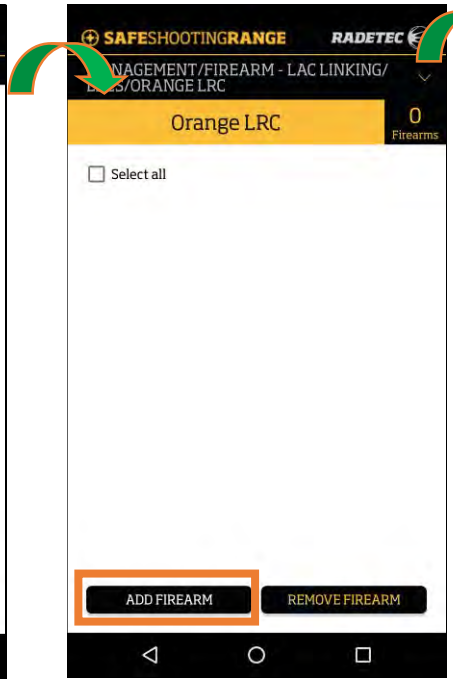
Select **Firearm – LAC linking** option



Select the **LRC** option

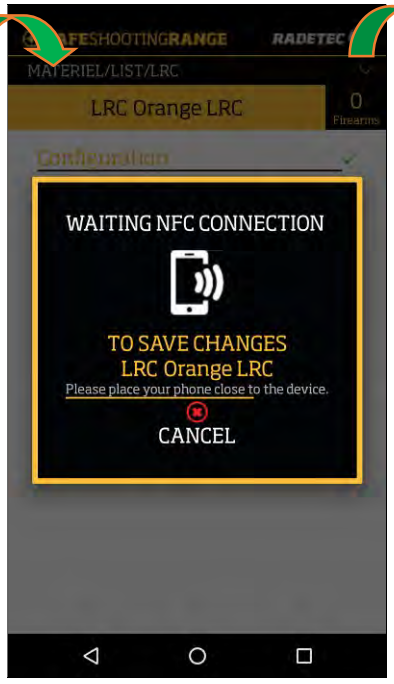


Select the LRC to which is wanted to link the LAC

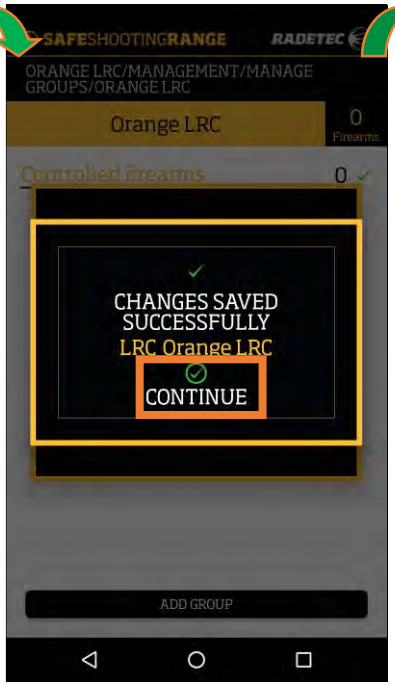


Select **Add Firearm** option

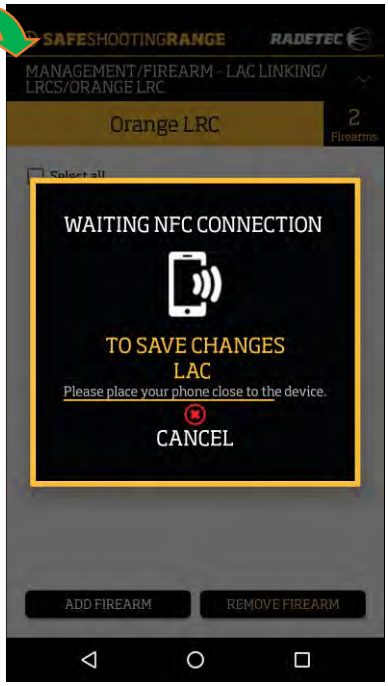
Select the secured firearm/s to be linked to the LRC and select **Accept**



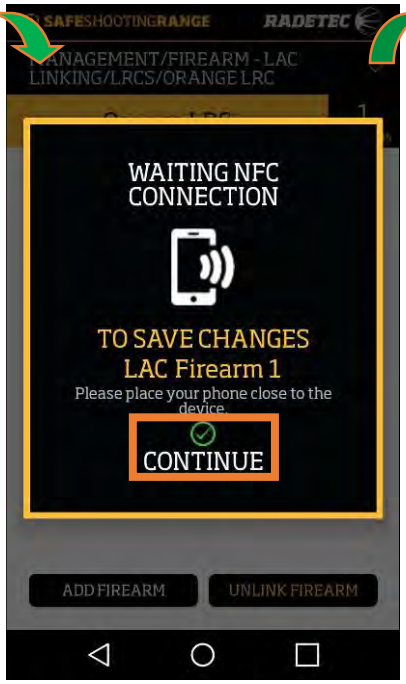
Place the NFC sensor of the smartphone over the LRC



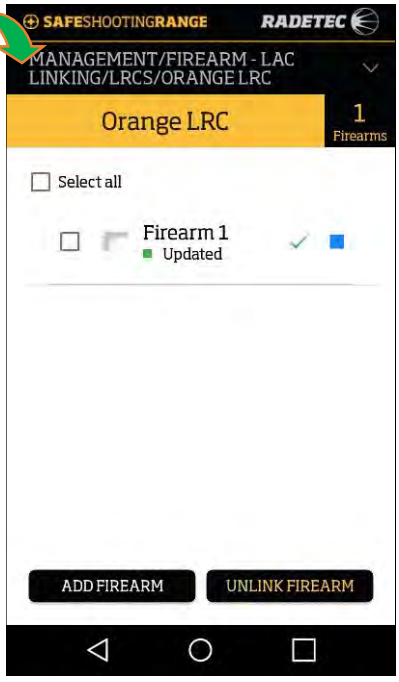
Select **Continue**



Place the NFC sensor of the smartphone over the LAC



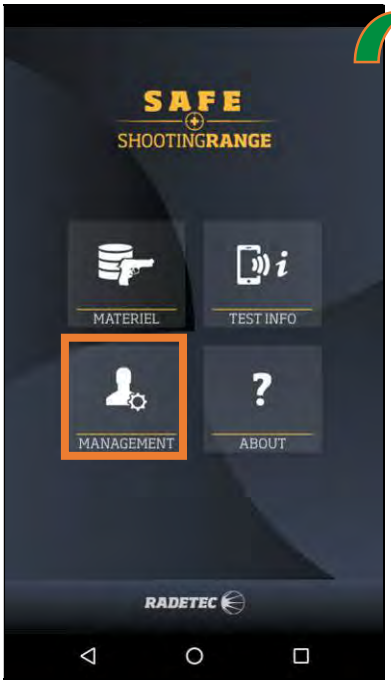
Select **Continue**



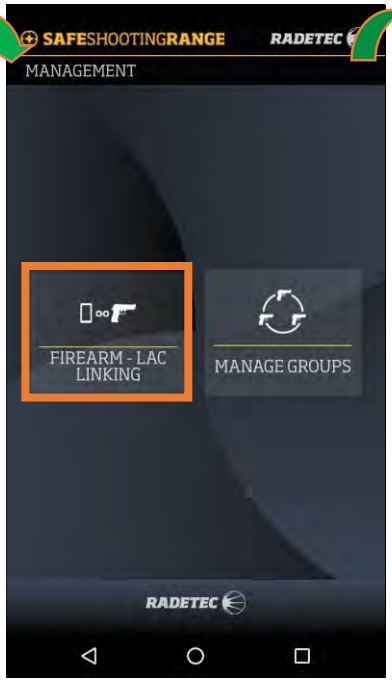
The secured firearm with LAC is displayed linked to the chosen LRC remote control

4.13. Actions with firearms: Unlink a firearm with LAC to an LRC

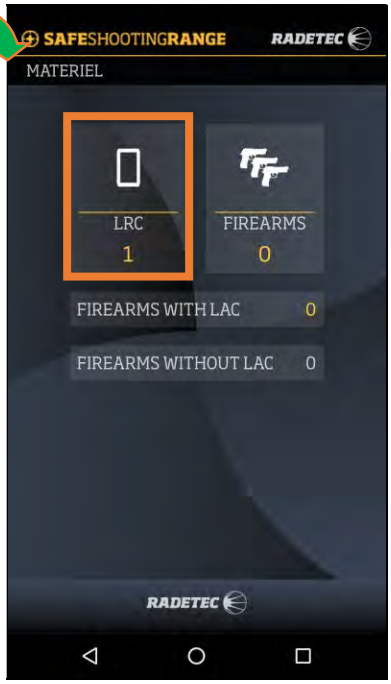
Remove the relation between firearms with LAC and LRC remote control



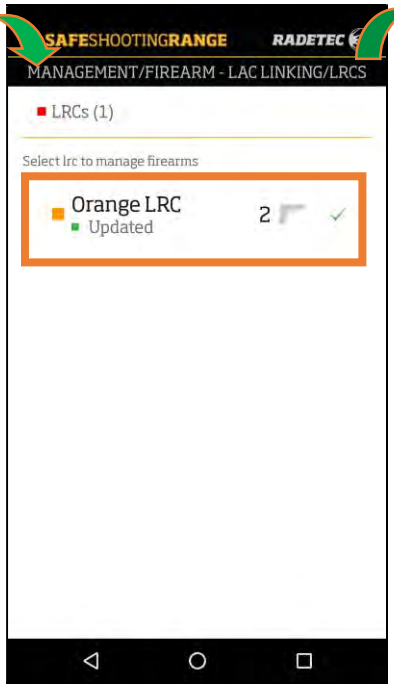
From the main screen select **Management** option



Select **Firearm – LAC linking** option

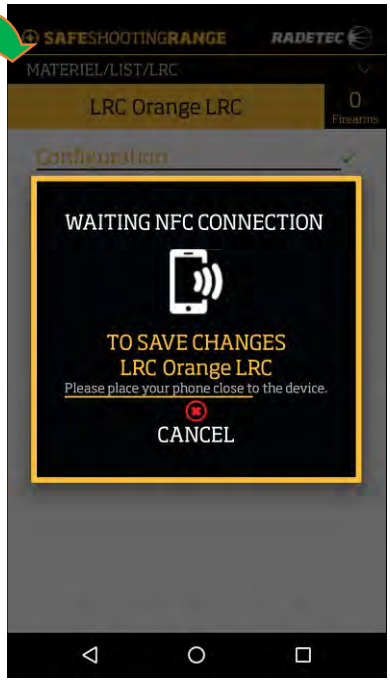


Select the **LRC** option

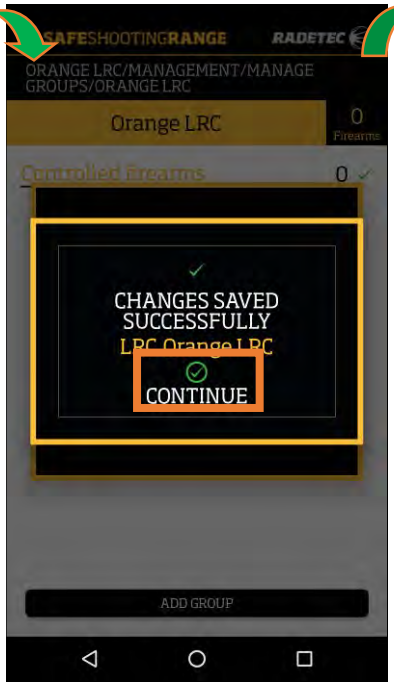


Select the LRC from which is wanted to unlink the secured firearm with LAC

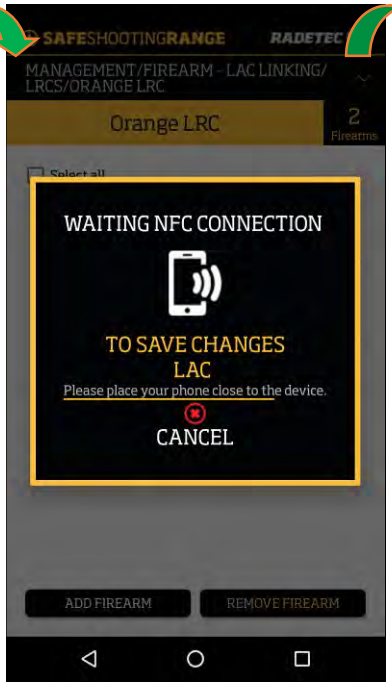
Select the secured firearm with LAC to be unlinked and select **Remove Firearm** option



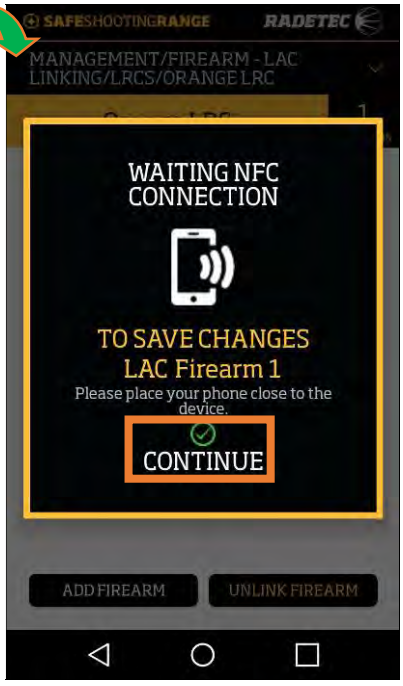
Place the NFC sensor of the smartphone over the LRC



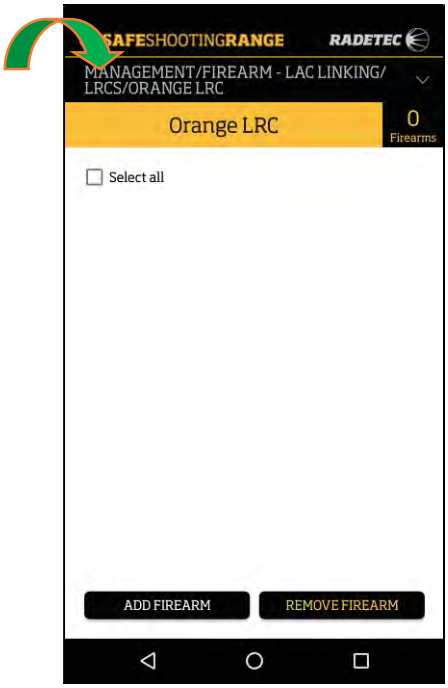
Select **Continue**



Place the NFC sensor of the smartphone over the LAC



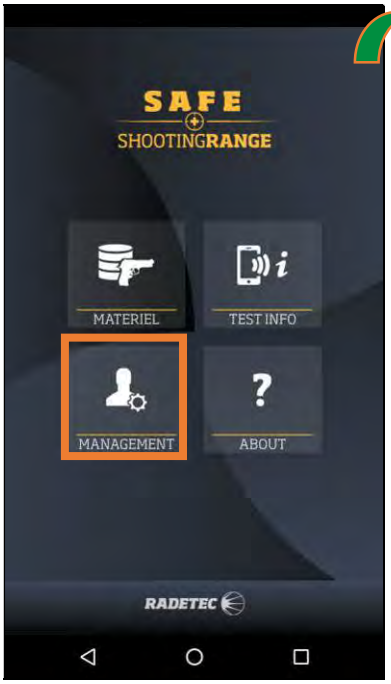
Select **Continue**



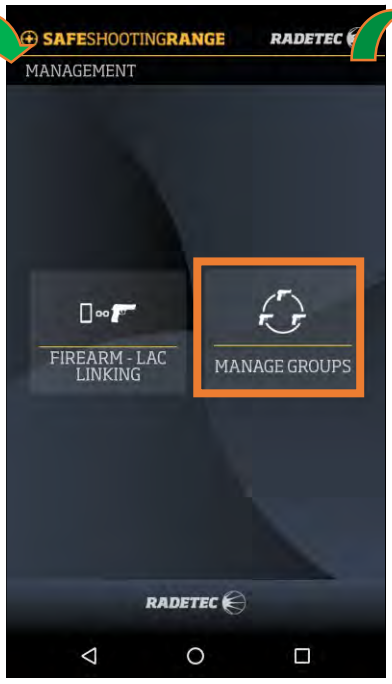
The secured firearm with LAC is unlinked and disappears from the chosen LRC

4.14. Actions with groups: Create a group

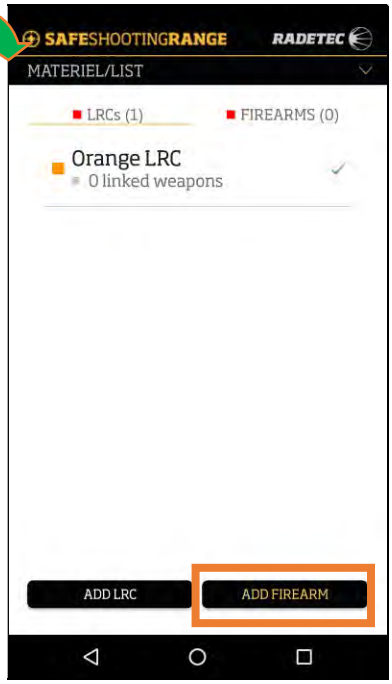
The maximum number of groups the application can manage is 10 (unassigned group included)



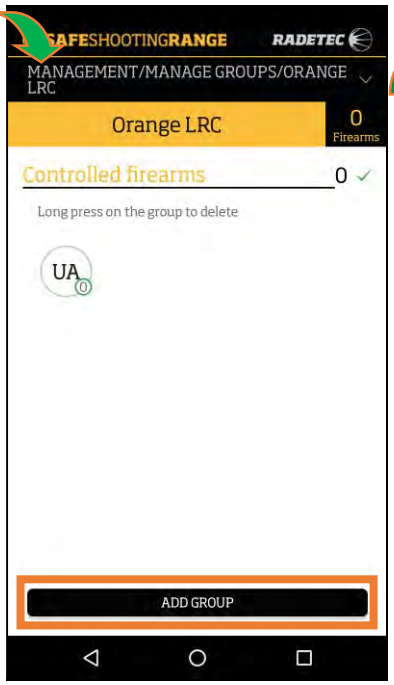
From the main screen select **Management** option



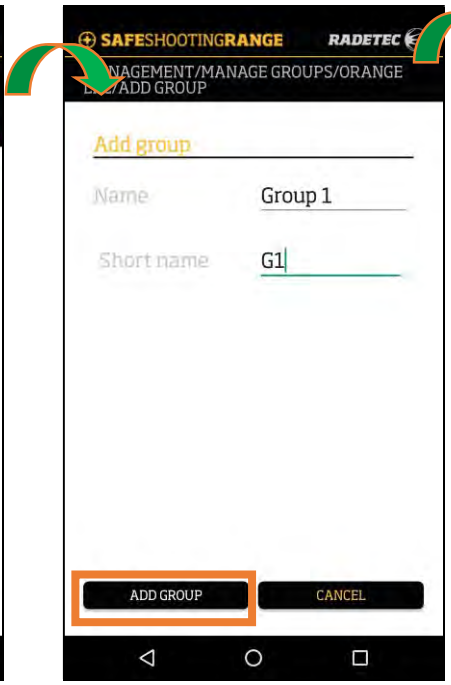
Select **Manage Groups** option



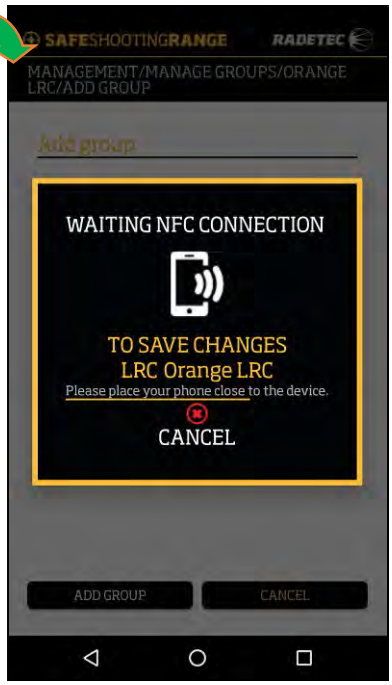
Select the LRC in which the group will be created



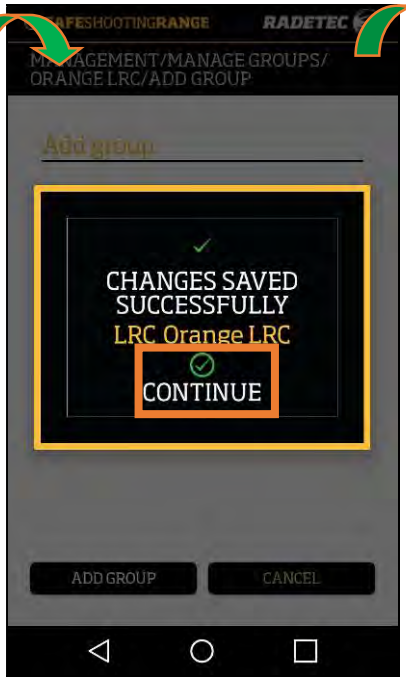
Select **Add Group**



Fill the group data out (both fields are mandatory) and select **Add Group**



Place the NFC sensor of the smartphone over the LRC

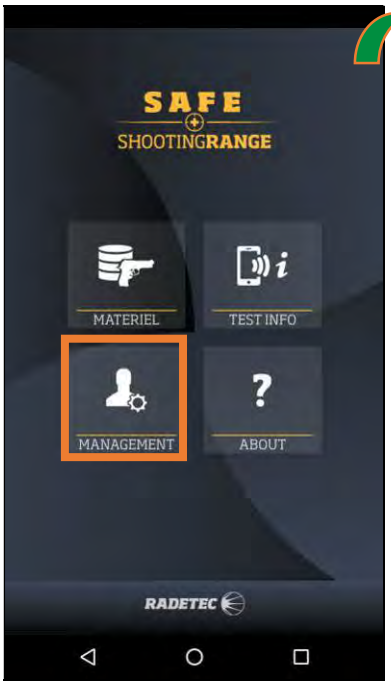


Select **Continue**

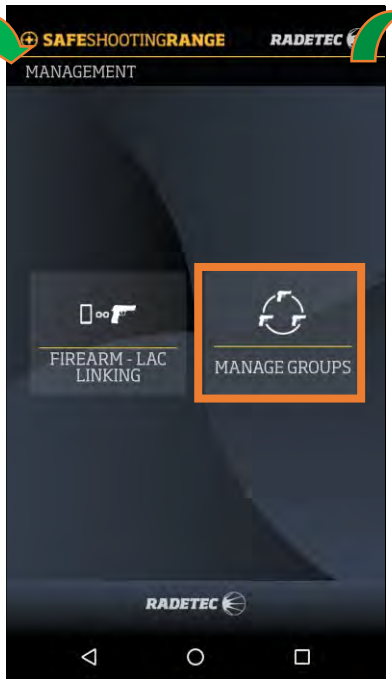
The created new group is displayed in the chosen LRC remote control

4.15. Actions with groups: Move a secured firearm with LAC to a group

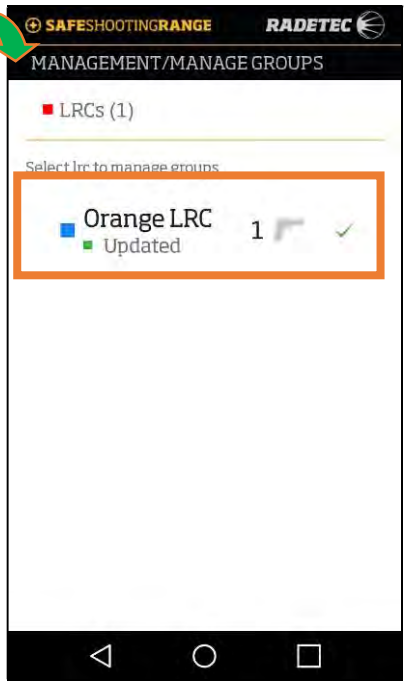
Move the firearms secured with LAC linked to the LRC remote control to be managed from another group



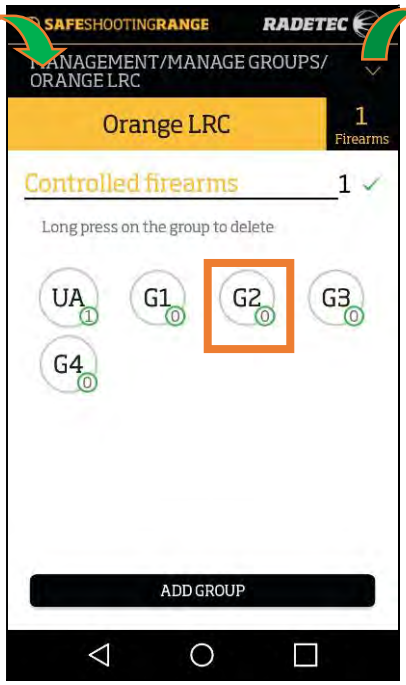
From the main screen select **Management** option



Select **Manage Groups** option

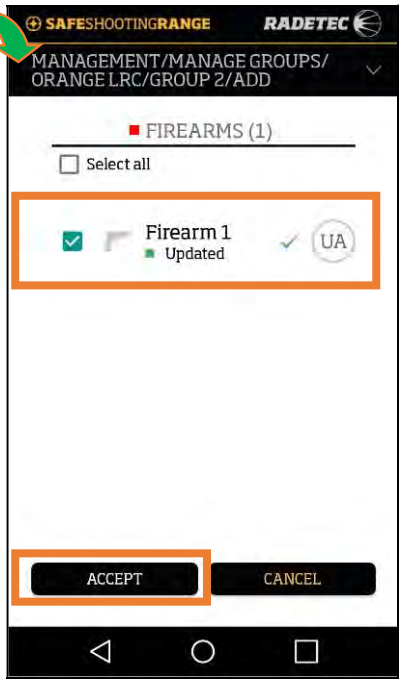


Select the chosen **LRC**

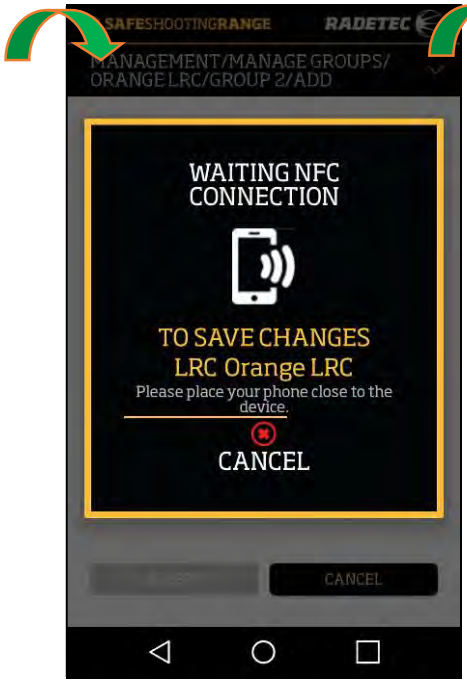


Select the group to which you want to move the firearm

Select **Add Firearm**



Select the secured firearm/s you want to move and select **Accept**



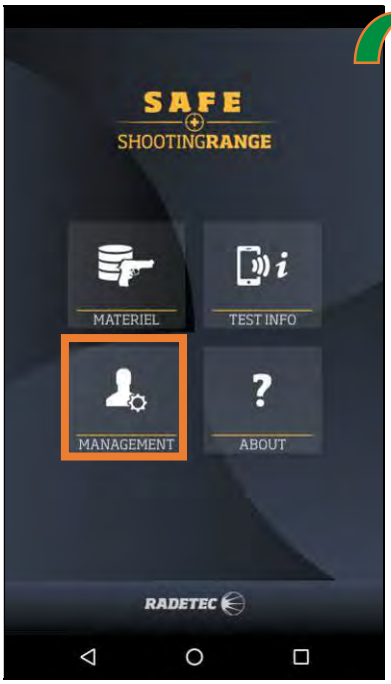
Place the NFC sensor of the smartphone over the LRC

Select **Continue**

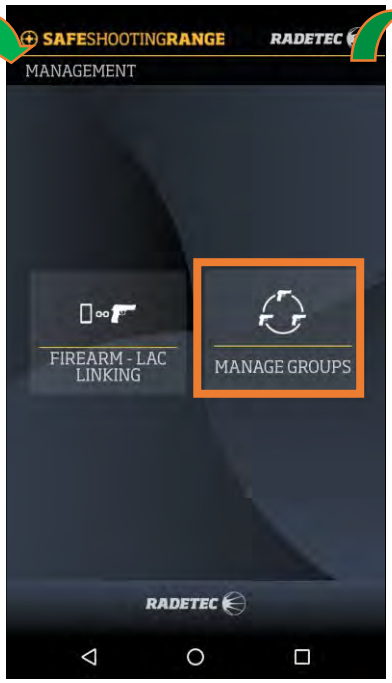
The secured firearm withLAC is displayed in the group of the LRC

4.16. Actions with groups: Remove a secured firearm with LAC to a group

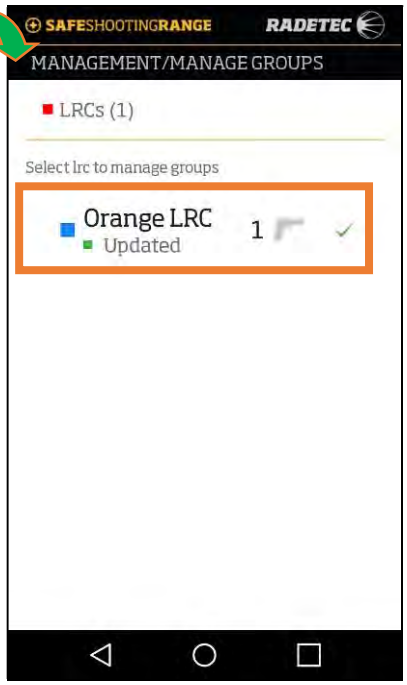
These firearms will pass to the unassigned group of the LRC remote control automatically



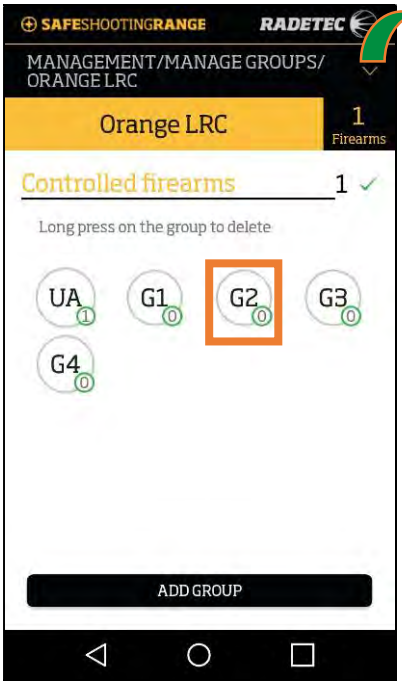
From the main screen select **Management** option



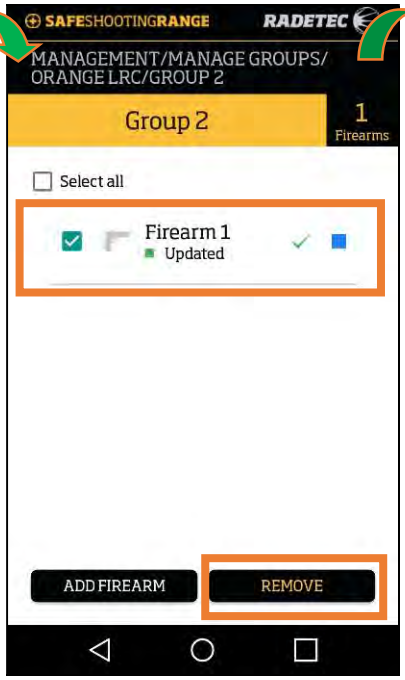
Select **Manage Groups** option



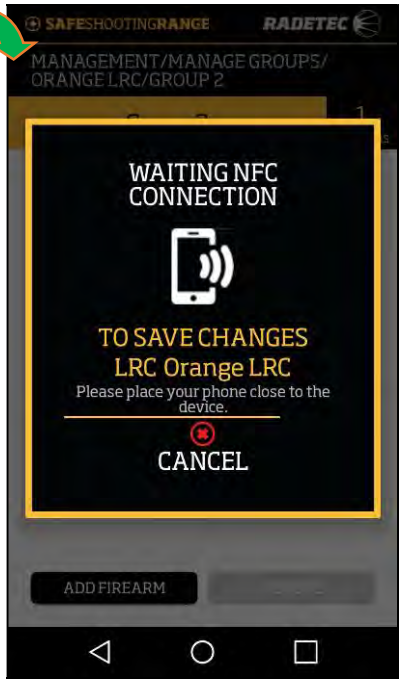
Select the chosen LRC



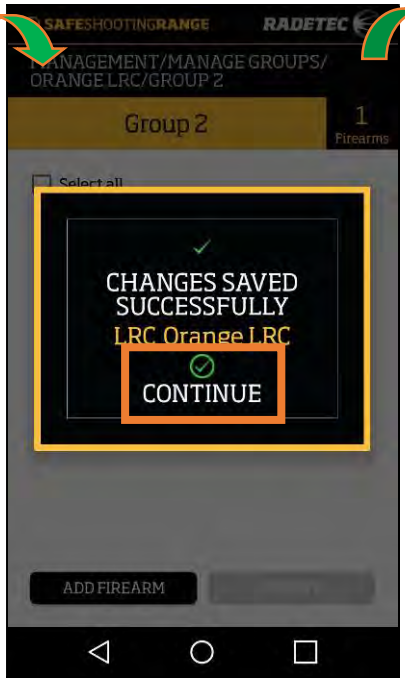
Select the group from which you want to remove the secured firearm



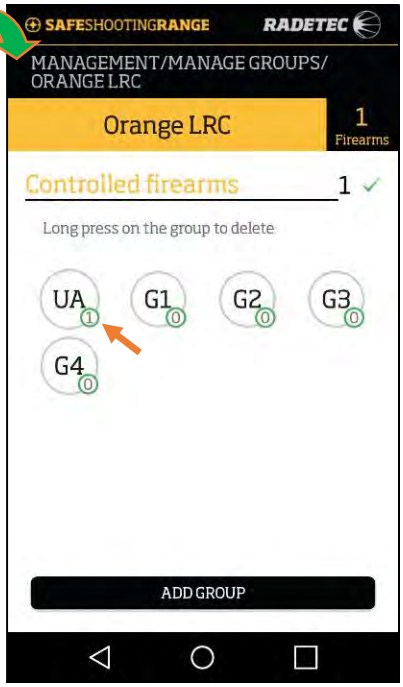
Select the secured firearm/s you want to remove



Place the NFC sensor of the smartphone over the LRC



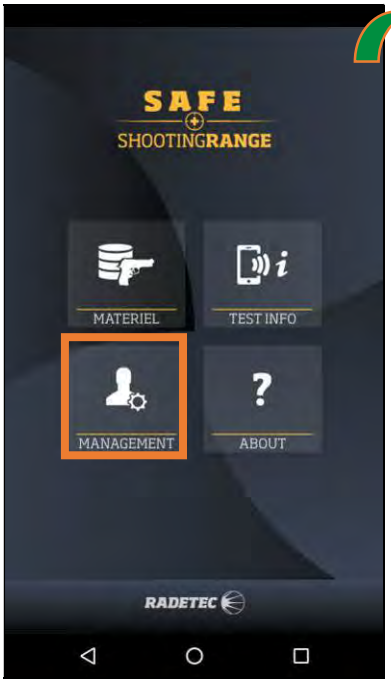
Select **Continue**



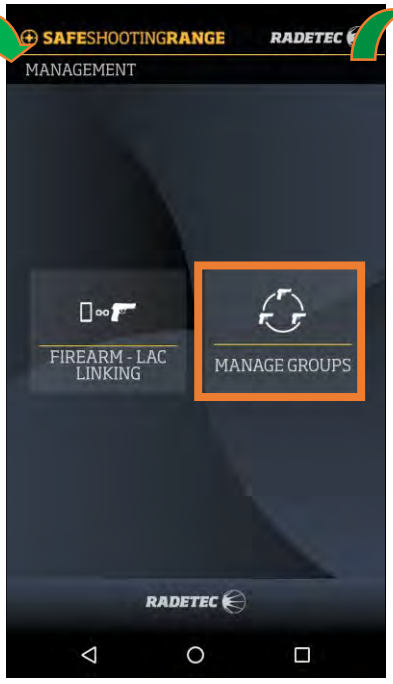
The secured firearm is displayed in the unassigned group

4.17. Actions with groups: Delete a group

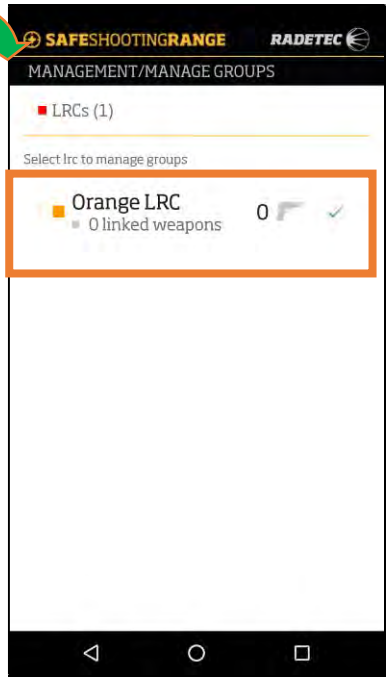
The secured firearms with LAC linked to the LRC remote control that are in the group to be deleted will be moved to the unassigned group



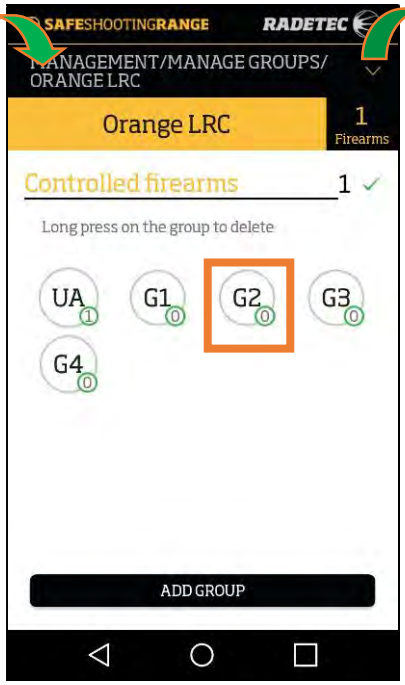
From the main screen select **Management** option



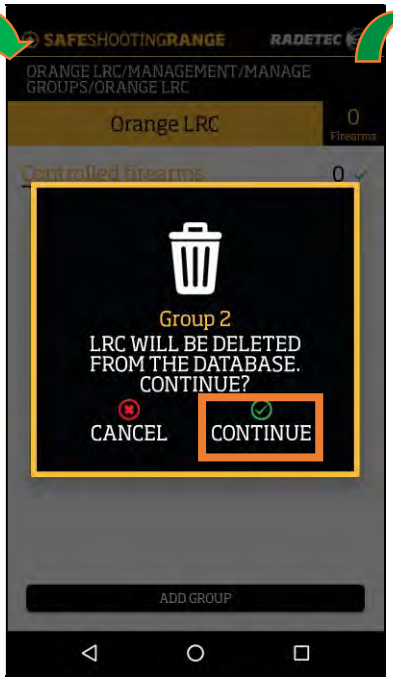
Select **Manage Groups** option



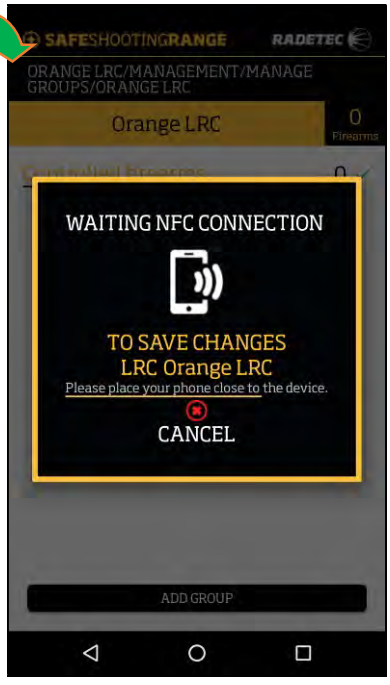
Select the LRC from you want to delete the group



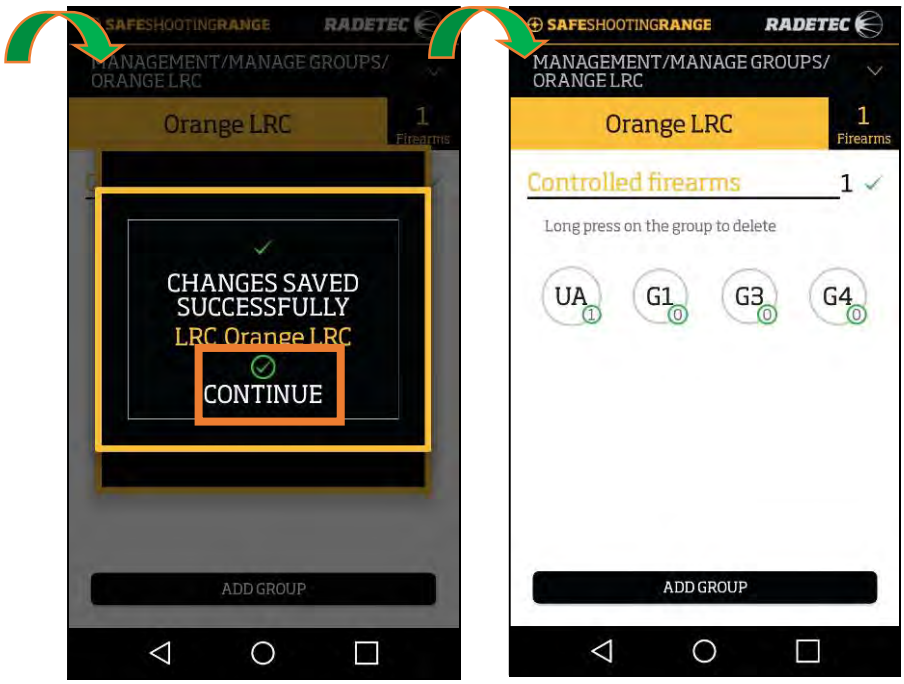
Long press on the group you want to delete



Select **Continue**



Place the NFC sensor of the smartphone over the LRC

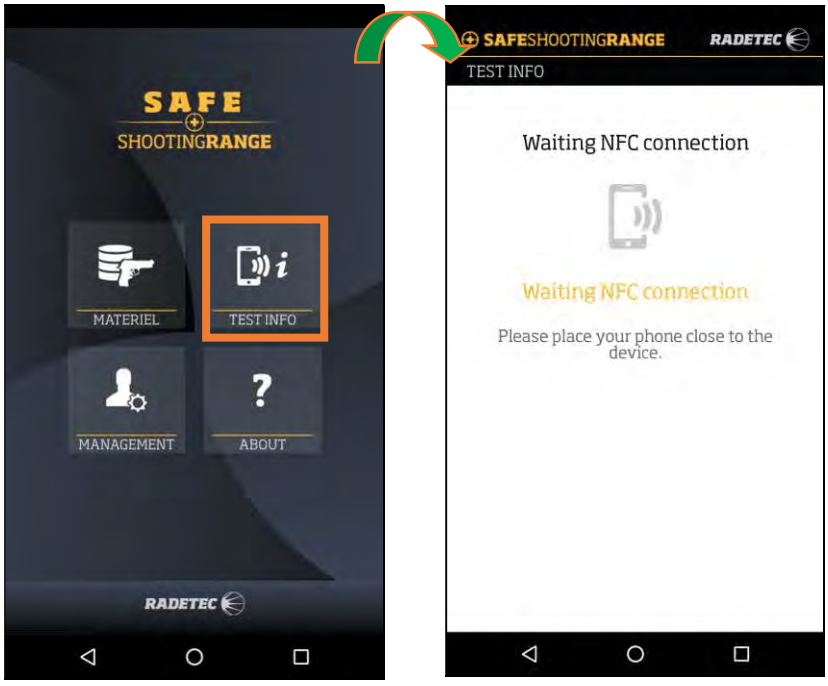


Select **Continue**

The group disappears from the chosen LRC

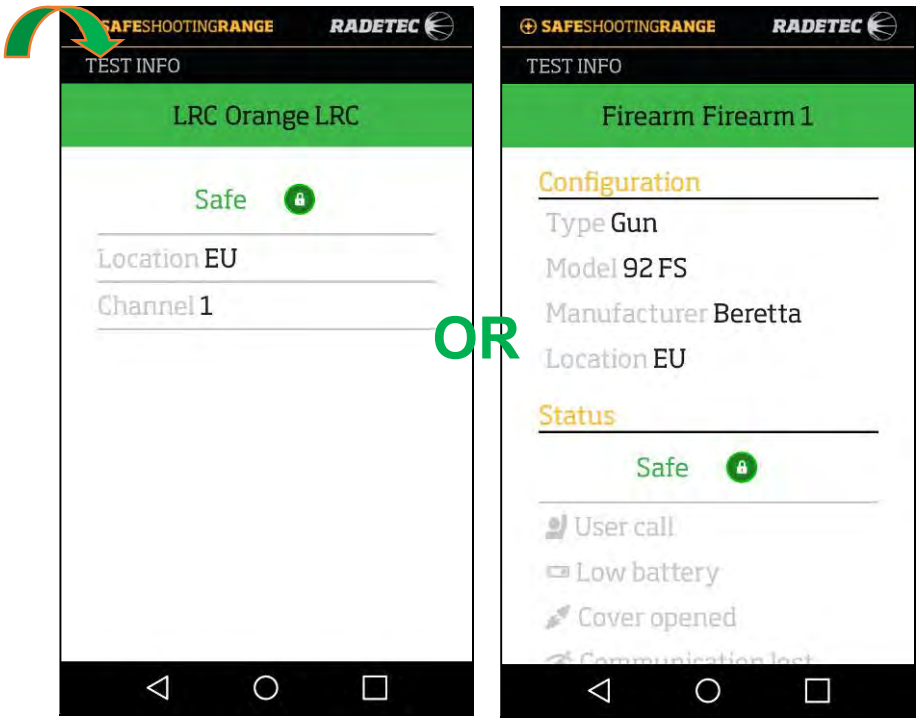
4.18. Test Info

This option allows to know the status of the LRC and the LAC device.



From the main screen select **Test Info** option

Place the NFC sensor of the smartphone over the LRC or the LAC device

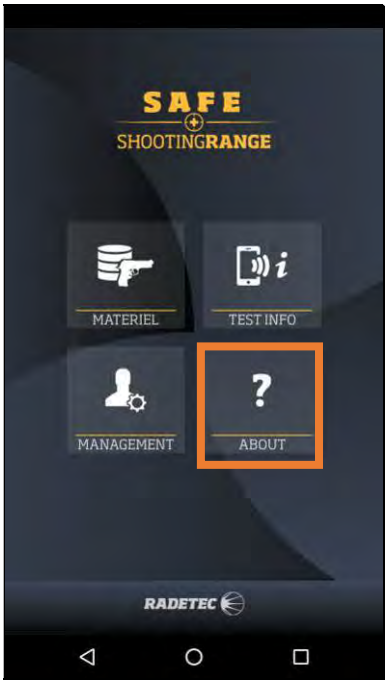


The information of the LRC is displayed

The information of the LAC device is displayed

4.19. About

App information is displayed

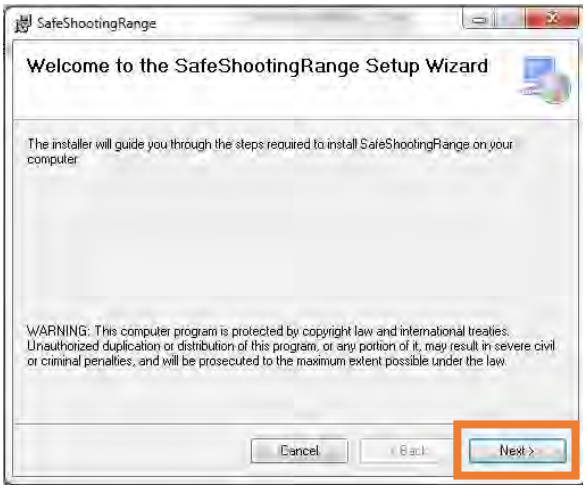


From the main screen select **About** option

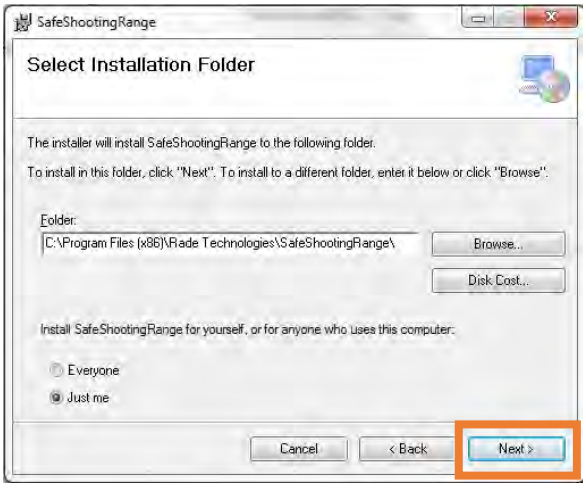
5. SSR Management Software (PC)

5.1. Initializing the system

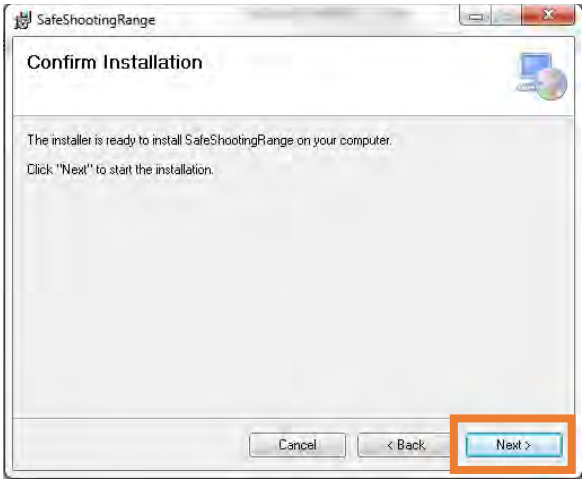
Connect the LRC dock to the PC and wait until Windows has installed the driver (if required). Then proceed with the *SSR Management Software* installation.



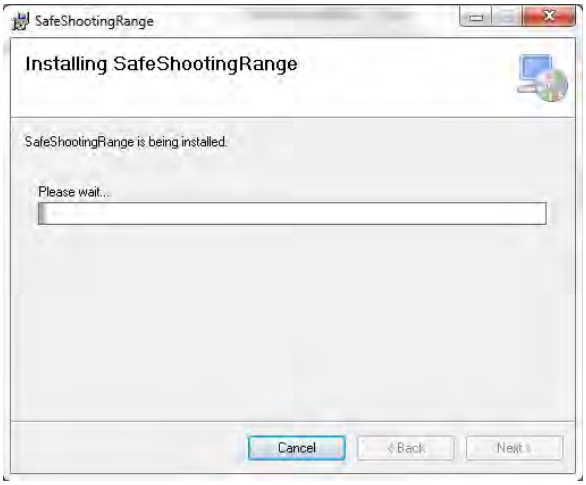
Run the application **SafeShootingRangeSetup.exe** with administrative privileges



Select the chosen folder and select **Next**



Confirm the installation

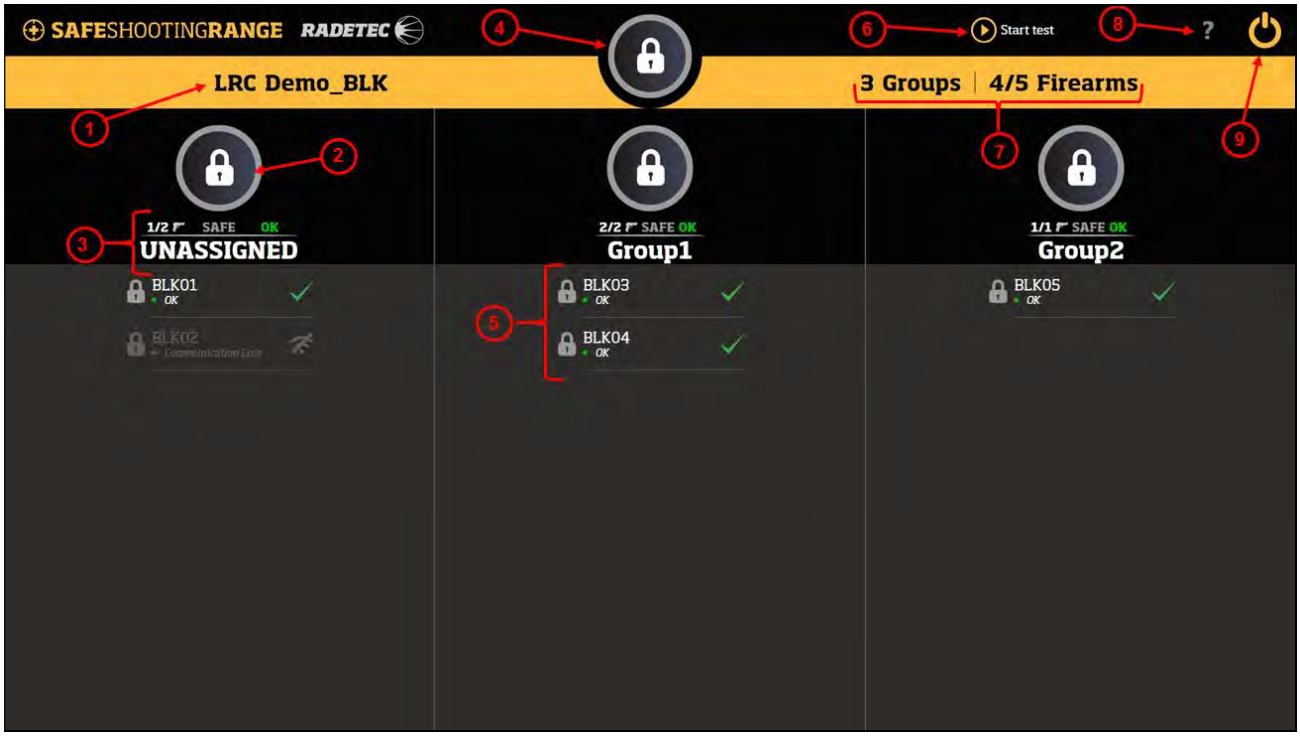


Wait until installation is completed and **close** the installer

5.2. Manage the groups

Run the *SSR Management Software* and connect the LRC to the LRC dock. Once the LRC is connected a pop-up window will inform that has been detected.

The software will display all the secured firearms with LAC that the LRC has synced in that moment, all of them will be grouped according to already created groups with the *Configuration App*. On the main screen the instructor has a view of the following:



1.- LRC Name

It displays the name of the LRC that is placed on the LRC dock.

2.- Group Lock/Unlock Button

Clicking on this button locks or unlocks the firearms assigned to the group, the icon changes depending of the locking status of the group.

Waiting to **Start Test**

Firearms **Locked**

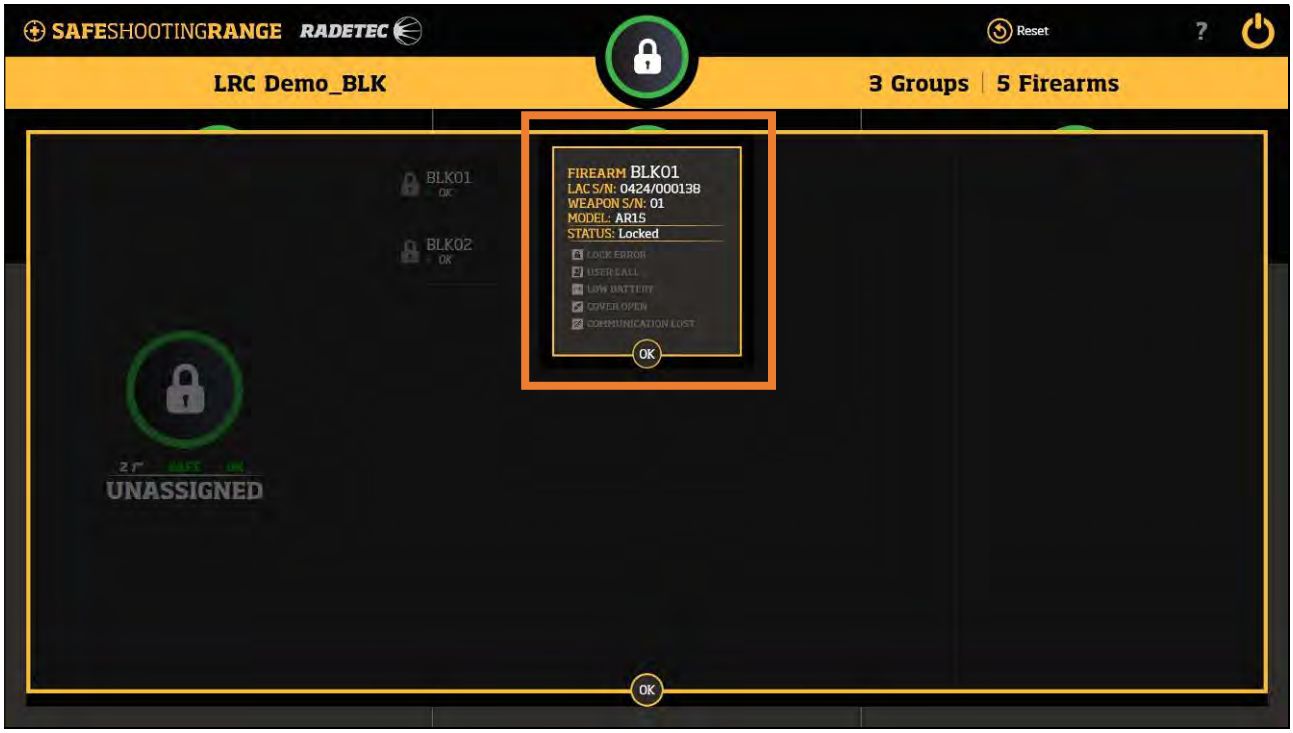
Firearms **Unlocked**

3.- Group Info

This area gives information related to the group: Number of firearms ready to be used and total number of firearms in the group, lock/unlock mode of the group (**SAFE** / **FIRE**), and the status of the group (**OK** / **Warning**).

Firearm Info Window

By clicking on *Group Info* a pop-up window will appear, and by clicking on any firearm displayed in the pop-up window a new pop-up window will appear with all detailed information of each firearm.

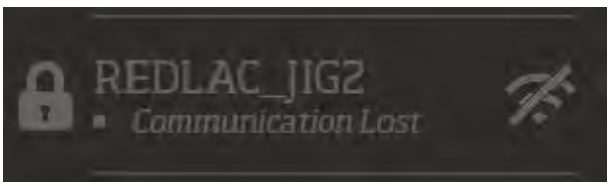


4.- Main Lock/Unlock Button

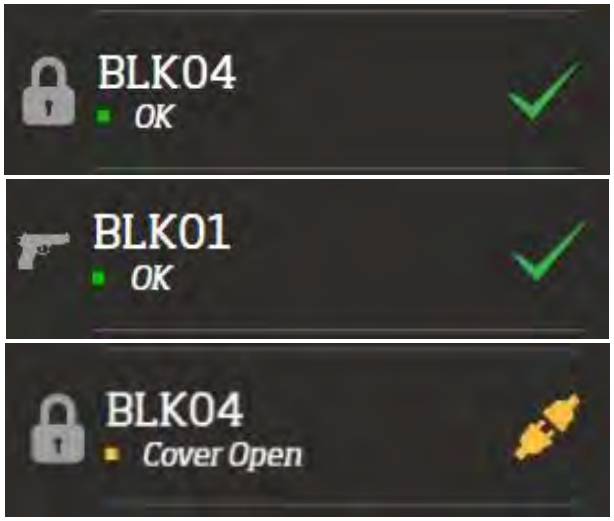
Clicking on this button locks and unlocks all firearms, regardless of which group they belong to. The icon changes in the same way as any Group Lock/Unlock button.

5.- Firearms Info

This area gives information related to each single firearm that that belongs to the group: Name and status of each firearm.



Firearm is **not detected** by the LRC



Firearm is detected by the LRC and **locked**

Firearm is detected by the LRC and **unlocked** (in this example firearm is a handgun)

Firearm is detected by the LRC and is presenting a **warning status**

6.- Start Test/Reset

This button allows the instructor to start the exercise, and during the exercise to reset the system if there is any change in the number of firearms already synced or if there are firearms to be synced.

If there are one or several firearms to be removed, in order to let the system know those firearms are no longer part of the exercise they must be deactivated, and afterwards the system must be restarted to avoid a permanent warning status.

If there are one or several firearms to be added, in order to let the system know those firearms are going to be part of the exercise they must be activated, and afterwards the system must be restarted to be able to detect them.

If there is any firearm that has been synced to the LRC, after clicking on **reset** the name will change to **Start Test**[1]**,** it will show how many firearms have been added.

If there is any firearm that has been removed, after clicking on **reset** the name will change to **Start Test**, click it again and it will show how many firearms have been removed

[1]If all firearms that the LRC has in its database are been added already, the **reset** button will remain as **reset**.

7.- General Info

This area displays how many groups and firearms are in total

8.- About

By clicking on this button a pop-up window will be displayed with information of software version and Radetec contact

9.- Quit Button

To exit the SSR management Software correctly this button must be clicked.

LRC disconnected

In order to be able to manage the groups the LRC remote control must be connected to the LRC dock all the time. If the LRC remote control is not detected or is removed from the dock the SSR Management Software will stops and inform that no LRC is connected.

This announcement will be displayed on the screen and no further actions can be performed until communication with the LRC is re-established

6. Operations

6.1. Use of the system by the instructor: LRC

By means of the LRC, the instructor can control which firearms are locked or unlocked.

In addition, through the *Advanced PC Management Application*, the LRC can be plugged to a PC to manage groups and exercises easier.

1.- Lock/Unlock LED

When the **red LED** lights, all firearms linked to the LRC are unlocked and are allowed to shot.

When the **green LED** lights, all firearms linked to the LRC are locked and are not allowed to shot.

2.- Lock/Unlock Buttons

Press **Fire Button** to unlock all firearms linked to the LRC

Press **Safe Button** to lock all firearms linked to the LRC

3.- Mute/Accept Button

During the system initialization, by pressing this button, you force the LRC to finish the search of the remaining LACs. The LRC keeps searching until all linked LACs are detected, but if a linked LAC can't be found (because has no battery, is out of range, etc.) the LRC won't be able to find it, in this case by pressing this button the LRC finishes the initialization.

The LRC warns the instructor if it detects a warning or an error, pressing this button stops the acoustic and vibration alarms.

4.- Status LEDs

Green LED:

When it blinks, the LRC is searching for linked firearms

When it lights, the LRC is finished with the firearms search

Amber LED:

When it blinks, there is a warning in one or several linked firearms (low battery, connection loss, call button pressed in one or several linked firearms, etc.)

Red LED:

When it blinks, there is a error present in one or several devices. System is not fully functional and requires of assistance

5.- Battery LED

When it blinks, the LRC is running out of battery and needs to be replaced

6.- Power Button

Press the **Power button** to turn on and off the LRC remote control

6.2. Use of the system by the shooter: LAC

Blue LED on: Synced

Green LED on: SAFE mode

Red LED on: FIRE mode

The shooter can ask for assistance to the instructor remotely with just pressing the *call button* that is placed in the left side of the firearm´s grip. As soon as the shooter presses the *call button* an amber LED blinks in both the firearm and the Status LED of the LRC remote control.

The LEDs of the Lock Module of the LAC device provide with information regarding to the mode and sync of the firearm. These LEDs are just informative, to check the lock status of the firearm always examine the safety selector (explained below).

The shooter can check the lock status by means of the red mechanical indicator of the safety selector. **The safety selector is the only true indicator of the mode status of the firearm** and the 4 situations the shooter may encounter while using the firearm are:

Selector mode: SAFE
Lock mode: SAFE
The shooter cannot fire

Selector mode: FIRE
Lock mode: SAFE
The shooter cannot fire

Selector mode: SAFE
Lock mode: FIRE
The shooter cannot fire

Selector mode: FIRE
Lock mode: FIRE
The shooter cannot fire

7. Technical Specifications

AR-15 LAC

Firearm Models	All AR-15 platform-based rifles
Protection Level IP	IP54
Battery's Autonomy	24 hours
Weight	150 gr.
Range of temperature	-15 ˚C / 60 ˚C
Locking types	Automatic lock, remote lock, manual lock
Time to lock	<200ms
Selector Positions	FIRE (semiauto); FIRE (automatic); SAFE
Resistant to products	Resistant to oils and regular firearm's cleaning
Color	black

AR-15 LAC Grip

Material	Highly resistant polymer (PA6 15%GF)
Grip Size	Standard
Compatibility	All AR-15 platform-based rifles
Height	-TBD-
Width	-TBD-
NFC	Yes
Communication ISM	915 MHz USA / 868 MHz UE
Electromagnetic Compatibility	FCC / CEE
Battery	Aprox. Capacity 1000mAh per Rifle
Battery Weight	Aprox. 25 grams
Recharge time	2 hours

CONTROL LRC

Protection Level IP	IP53
Battery's Autonomy	24 hours

Dimensions (mm)	134.6 x 75.9 x 27.6
Material	ABS
Protective case's Material	TPU
Weight	147 gr.
Color	Grey
NFC	Yes
Communication ISM	915 MHz USA / 868 MHz UE
Electromagnetic Compatibility	FCC / CEE
Warning Light	Green (Safe) / Red (Fire) / Alarm / Error
Warning Vibrator	Turn on / Turn Off / Alarm
Warning Sound	Alarm
Battery	NP-BX1 Li-Ion 3.6V Capacity 1000mAh
Battery Weight	Aprox. 22.6 grams
Recharge time	2 hours

8. Regulations

FCC – FEDERAL COMMUNICATIONS COMMISSION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

RF EXPOSURE SAFETY

This device is a radio transmitter and receiver.

It is designed not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

PERMITTED ANTENNA

This radio transmitters, model FCC ID: 2AMSYLACP0141 and FCC ID: 2AMSYLRCP0141 have been approved by FCC to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Type	**Max Gain**
Ceramic Chip Antenna	+0.5 dBi