Dynamic Group Creator Reloaded
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FEATURES:
=========

The DGC reloaded provides a fast and easy way to create a random numbers of groups of a random size. They will also patrol randomly in the self-defined area.

Basic Features:
- All sides supported (BLUFOR, OPFOR, RACS and Civilian)
- Each side can be defined as friendly or enemy to player's side
- Full Vehicle support
- Randomized Group sizes. Just define the min and max.
- Randomized Group numbers. Also here define the min and max you like to have.
- 3rd party addons can be added very easy.
- Selectable type of deleting dead bodies/vehicles.

KNOWN LIMITATIONS
=================
ArmA supports not more than 144 Groups per side. With the bodyremover enabled, the DGC can create far more than these 144 Groups. But limit stays for groups present at the same time.

HOW TO USE
==========
Put the folder "dgc_reloaded" into your missions directory.
Extract the files into your missions directory. If you have "Use Folder Names" checked, it will extract all of the files into the folder "**dgc_reloaded**"
If not, you will have to create a folder named **dcg_reloaded** and extract the files into that directory.
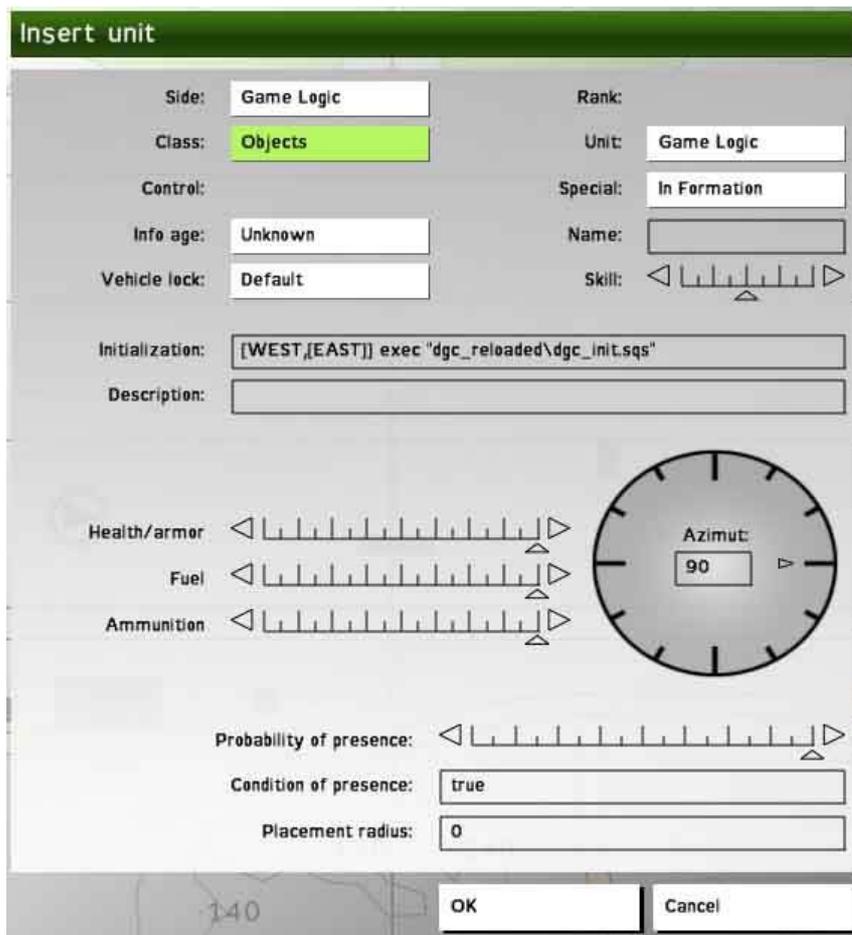
QUICK START
===========
This readme is long and maybe you don't want read it all right now. So here's a quick start for you. For this I will guess that you play on WEST (Blufor) and enemies should be EAST (OPFOR).

Here we go:
- Create a Gamelogic somewhere (doesn't need to be named)
- Place the following in the "initialization" field:

[WEST,[EAST]] exec "dgc_reloaded\dgc_init.sqs"

Insert unit

Side:	Game Logic	Rank:	
Class:	Objects	Unit:	Game Logic
Control:		Special:	In Formation
Info age:	Unknown	Name:	
Vehicle lock:	Default	Skill:	

Initialization: [WEST,[EAST]] exec "dgc_reloaded\dgc_init.sqs"

Description:

Health/armor

Fuel

Ammunition

Azimut: 90

Probability of presence:

Condition of presence: true

Placement radius: 0

OK   Cancel

This will initialize the DGC and is needed only once.

Creating the zone:
- Create a trigger and give it a unique name (i.e. MYZONE)
- Set the shape to **ELLIPSE** and the x-axis and y-axis size to a size that covers the area you want have enemies patrolling.
- Make sure x-axis and y-axis have identical values (i.e 300/300, NOT 300/400)
- In the line **CONDITION**, delete **THIS** and type in **TRUE**
- In the **ON ACT.** line put the scriptcall:

[MYZONE, triggersize, 6, [[EAST, [2,3],[2,3],[2,4],[2,4],[7,11],[4,8]]]] exec "dgc_reloaded\dgc_zone.sqs"

  Replace **TRIGGERSIZE** with the values you set for the trigger (i.e. your trigger has size 300/300, then fill in 300)

Insert trigger

Axis a	300	Axis b	300
Angle	0	Ellipse	Rectangle

Activation	None	Once	Repeatedly

Present	Not present
Detected by BLUFOR	Detected by OPFOR
Detected by Independent	Detected by Civilians

Countdown   Timeout

Min: 0   Max: 0   Mid: 0

Type: None

Name: MyZone   Text:

Condition: true

On Act. [MYZONE, 300, 6, [[EAST, [2,3],[2,3],[2,4],[2,4],[7,11],[4,8]]]] exec "dg

On Dea.

Effects   OK   Cancel

You're ready to go. This will create 2 or 3 groups of T72, 2 or 3 groups of light armored vehicles (Shilka, BRDM, BMP), between 2 and 4 groups of armed vehicles (the UAZ's), between 2 and 4 groups of unarmed vehicles (ural, UAZ), between 7 and 11 groups of standard infantry patrols and finally between 4 and 8 groups of Spetznaz.

For more zones, just go back to "Creating the zone". There's no zone limit by itself but keep the group limit in mind (144 per side at once)

There are a lot of possibilities of customizing the whole thing to your very own needs but for this I suggest you take a few minutes and read this document to the end.

And for those who want to know more about it....

INITIALIZATION
==============
Create a Gamelogic (doesn't need to be named).
In the init line, call the dgc_init.sqs like the following example:

  [PlayerSide, [EnemySide], [FriendlySide], ["Remove", Time]] exec "dgc_reloaded\dgc_init.sqs"

1.: **PlayerSide**
  Define which side the player belongs to. Only one side can be given here.
  Accepted values: **WEST**, **EAST**, **Resistance**, **Civilian**
  Remember that side names still are the same as it was in OFP, so WEST = BLUFOR, EAST = OPFOR and RACS = Resistance. Civilian stays as is.

2.: **EnemySide**
  This array defines the player's enemy sides. These units will attack units on players side. It is possible to define more than one side as enemy, i.e. **[EAST, Resistance]**. Both sides will be enemy to player's side.

3.: **FriendlySide** (optional)*
  Array that defines the players friendly sides. These units will NOT attack units on players side. Works the same way as the enemy array.

*This is an optional parameter. If you don't plan to create friendly units, this array can be left out**. It MUST be there if remover array will be used**. Can stay empty.

Remember, each side can be defined as playersside, enemyside or friendlyside.
Not all side has to be set. If you don't plan to use i.e. RACS, just don't fill it in. Arrays can stay empty.

4.: **Remove** (optional)*
  This is the body/vehicle remover settings. If this is not set, default value will be REPLACE
        "BODY" = Only bodies. Vehicles stay in place.
        "REMOVE" = Will remove bodies and vehicles.
        "REPLACE" = Will replace vehicles with wrecks if necessary (i.e. Blackhawk wreck)
        "NONE" = No bodies or vehicles will be deleted. With this setting, only 144 groups can be created!
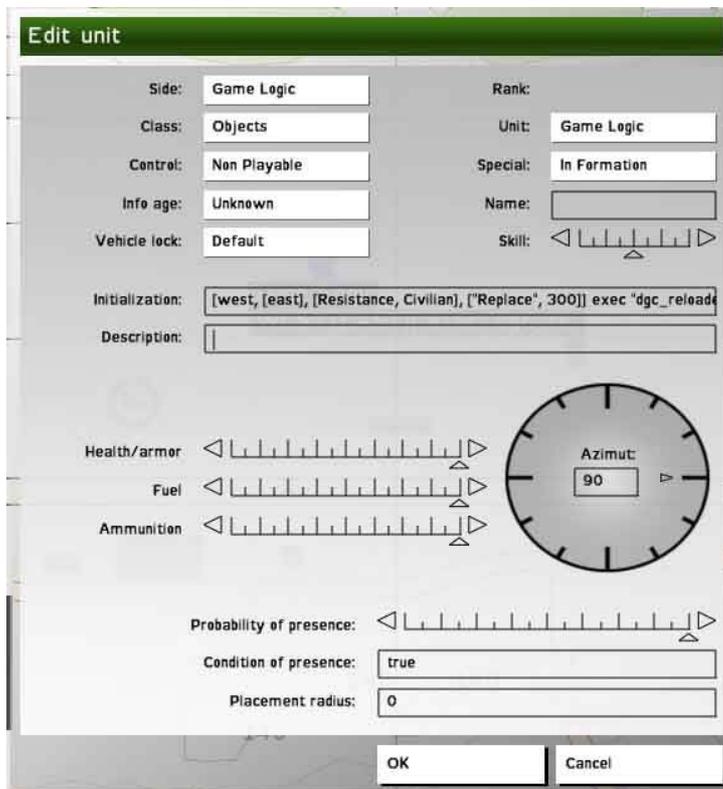
5.: **Time** (optional) If this is not set, default value will be 300
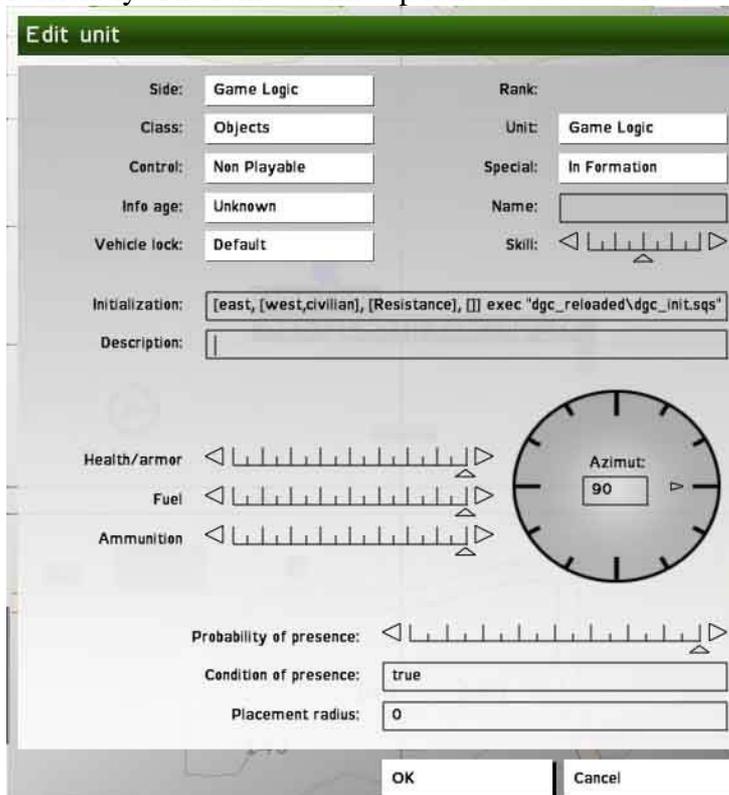   Time = delay for deleting in seconds. Can be left out if type is "NONE"

*This is an optional parameter. **If you plan to enable a setting other than default, it MUST be there if FriendySide array is used.**

The **dgc_init.sqs** will launch itself all other necessary scripts. If this initialization is done, zones can be used.

In this example, EAST (OPFOR) is considered enemy and will attack all WEST (BLUFOR) units. Resistance and Civilians are friendly to West. Destroyed vehicles will be replaced with wrecks after 300 seconds.

Edit unit

Side:	Game Logic	Rank:	
Class:	Objects	Unit:	Game Logic
Control:	Non Playable	Special:	In Formation
Info age:	Unknown	Name:	
Vehicle lock:	Default	Skill:	

Initialization: [west, [east], [Resistance, Civilian], ["Replace", 300]] exec "dgc_reloade

Description:

Health/armor

Fuel

Ammunition

Azimut: 90

Probability of presence:

Condition of presence: true

Placement radius: 0

OK   Cancel

In this example, the player is East and is unfriendly to West and Civilians. Resistance is friendly. The remove/time options are set to default.

Edit unit

Side:	Game Logic	Rank:	
Class:	Objects	Unit:	Game Logic
Control:	Non Playable	Special:	In Formation
Info age:	Unknown	Name:	
Vehicle lock:	Default	Skill:	

Initialization: [east, [west,civilian], [Resistance], []] exec "dgc_reloaded\dgc_init.sqs"

Description:

Health/armor

Fuel

Ammunition

Azimut: 90

Probability of presence:

Condition of presence: true

Placement radius: 0

OK   Cancel

CREATING A ZONE

You may use any object to call this script, but it is recommended to use a trigger to get a visual idea of the zone size. The size of the trigger is not important, as the **actual** spawn radius is handled in the scriptcall below. If creating a trigger, the X and Y axes must be the same, since the zone will always be a circle.

In **condition**, replace "**this**" with "**true**". Give the trigger a unique name, such as **myzone**

In the on activation line (or init line, if you use another object), we will insert the scriptcall:

[**ZoneName**, **ZoneSize**, **treshold_offset**, [[**CreateSide**, [*#*,*#*],[*#*,*#*],[*#*,*#*],[*#*,*#*],[*#*,*#*],[*#*,*#*], ["**Behavior**", "**Speed**", "**CombatMode**", "**Formation**", **Skill**, **Flee**]]]] **exec "dgc_reloaded\dgc_zone.sqs"**

Let's see the values and their meanings:

1.: **ZoneName**
This is the name of the trigger or object. As described above it can also be any editor placed object.

2.: **ZoneSize**
Defines the actual radius of the zone. If you are using a trigger to get an idea of the zone size, set the trigger to the number you put here.

3.: **treshold_offset**
The distance between player's position and the zone is checked automatically and the best "start creating" distance is set according to the performance of the Server. You can adjust this depending on the real viewdistance in the zone (fog, obstacles like hills and forests and so on), or to optimize performance of the mission. Setting a different **threshold_offset** value might come in handy. Recommended is a value of **6**. This will create the units approx at a distance of 1400meters between player and center of the zone. Values smaller than 6 will create the groups while the player is further away, and larger values will create them while the player is closer.

4.: **CreateSide**
Side that will be created.

5.: **armored** **[#,#]**
  Example: M1A1, T72
  Defines how many groups of heavy armored vehicles will be created. It is entered as a minimum and maximum value. Example: **[4,6]** will create a minimum 4 groups and a maximum of 6 groups. If you do not wish to have any armored spawn, leave the brackets empty.

6.: **light** **[#,#]**
  Example: Stryker, BMP, BRDM, M113 and so on
  Defines how many groups of light armored vehicles will be created. Uses same syntax as **armored**

7.: **armed[#,#]**
  Armed cars, examples: Hummvee M2, 5t_Truck MG, UAZ_AGS
  Defines how many groups of armed vehicles will be created. Uses same syntax as **armored**

8.: **unarmed** **[#,#]**
  Unarmed cars, examples: UAZ, Hummvee, Landrover
  Defines how many groups of unarmed vehicles will be created. Uses same syntax as **armored**

9.: **standard** **[#,#]**
  Creates normal infantry groups. Units are selected randomly.
  Uses same syntax as **armored**

10.: **specops** **[#,#]**
  Creates groups containing special units (Marksman / Spetznaz, depending on side). Uses same syntax as **armored**

11**.: ["Behavior", "Speed", "CombatMode", "Formation", Skill, Flee]** (optional)
  Define behaviors for each side inside a single zone. Default Values are

["SAFE", "LIMITED", "RED", "FILE", 1, 0]

 If you do not wish to specify, you can comment this area out by deleting whatever is inside the brackets.

 All 6 Elements MUST be provided but can be empty string
  This is a valid array: **["", "", "GREEN", "", "", ""]**
  This is not a valid array: **["CARELESS" , , , "COLUMN", ,]**
Acceptable values listed below in AI Behavior area.

ZONE CODING EXAMPLES:

[MyZone, 4000, 2, [[Civilian, [],[],[],[2,4],[4,10],[], ["SAFE", "FULL", "RED", "COLUMN", 1, 0]]]] exec "dgc_reloaded\dgc_zone.sqs"

This will create between 2 and 4 squads of Civilians in unarmed vehicles and between 4 and 10 squads of Civilians running around in a 4000 area and will spawn when the player is very close to the center of the zone. They are highly skilled and will not flee.

[MyZone, 200, 9, [[East, [1,4],[],[],[2,4],[],[3,4],[]]]] exec "dgc_reloaded\dgc_zone.sqs"

This will create between 1 and 4 tank squads, 2 to 4 unarmed vehicle squads, and between 3 and 4 squads of special ops for East. They will use the default AI Behavior. The script will spawn them when the player is very far away from the center of the zone.

[MyZone, 2000, 6, [[West, [],[2,4],[],[],[],[], ["", "FULL", "", "", 1, 0]]]] exec "dgc_reloaded\dgc_zone.sqs"

This will spawn between 2 and 4 light armored vehicles for West. They will deviate from default AI behavior only in the fact that they will travel at full speed.

CUSTOMIZATION AND OTHER OPTIONS
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You may customize certain values in the scripts such as group sizes, AI behavior, Civilian weapons, and group configuration.

Group Size
You can change the minimum and maximum group sizes for each class (armored, standard, etc.) in **dgc_edit_me.sqs**.

Locate the class you want to edit and change the value to the range you want. Making the values identical will have a fixed group size.

> **_dgc_armed_grpsize_min = 2**
> **_dgc_armed_grpsize_max = 6**

One single group will have at least 2 cars but not more than 6.

AI Behavior
You can change the default AI behavior in **dgc_edit_me.sqs**

> **; Seventh part: Basic AI behaviors**
> **; Set these Parameters as you need.**
> **_dgc_group_behaviour = "SAFE"**
> **_dgc_group_speed = "LIMITED"**
> **_dgc_group_combatmode = "GREEN"**
> **_dgc_group_formation = "FILE"**
> **_dgc_group_skill = 1**
> **_dgc_group_fleeing = 0**

These settings will set how the groups will act.

_dgc_group_behaviour
> Accepted Values:
>> "**CARELESS**"
>> "**SAFE**"
>> "**AWARE**"
>> "**COMBAT**"
>> "**STEALTH**"

" **SAFE** " will be preferred setting for relaxed patrols but still attacking enemies.

> **_dgc_group_speed**
>> Accepted values:
>>> "**LIMITED**" (half speed, infantry will walk, not run)
>>> "**NORMAL**" (full speed, maintain formation)
>>> "**FULL**" (do not wait for any other units in formation)

_dgc_group_combatmode

> Accepted values:
>> "**BLUE**" (Never fire)
>> "**GREEN**" (Hold fire - defend only)
>> "**WHITE**" (Hold fire, engage at will)
>> "**YELLOW**" (Fire at will)
>> "**RED**" (Fire at will, engage at will)

_dgc_group_formation

> Accepted values:
>> "**COLUMN**"
>> "**STAG COLUMN**"
>> "**WEDGE**"
>> "**ECH LEFT**"
>> "**ECH RIGHT**"
>> "**VEE**"
>> "**LINE**"
>> "**FILE**"
>> "**DIAMOND**"

_dgc_group_skill

> Accepted values: between 0 and 1
> Approximate ranges are:
> Novice < **0.25**
> Rookie >= **0.25** and <= **0.45**
> Recruit > **0.45** and <= **0.65**
> Veteran > **0.65** and <= **0.85**
> Expert > **0.85**

_dgc_group_fleeing

> Accepted values:
>> between **0** and **1**

The less courage a group or unit has, the sooner it will start fleeing. 0 means maximum courage, while 1 means always fleeing.

Civilian Weapon Loadouts

You may edit the available weapons for Civilians in **dgc_edit_me.sqs**

> ; Eighth part: Civilian Weapons
> ; Add array [**weapon classname**, [**magazine classname**, **number of magazines**], [**magazine classname**, **number of magazines**]

Here you can select which weapons civilians will have. **There are already default values inside the script.** The chance that civilians will have secondary weapons is 15% and handguns the chance is 30%. Weapons are always selected randomly.

In order to remove weapons from civilians, clear the information in **_dgc_civ_prime**, **_dgc_civ_second**, and **_dgc_civ_hand** arrays so that it looks like this:

_dgc_civ_prime = []
_dgc_civ_second = []
_dgc_civ_hand = []

Special: As some weapons needs more than only one type of ammo (with applied M203 i.e.) you must add both magazine types.

<p style="color:red">**["AG74GL", ["30Rnd_545x39_AK", 4], ["1Rnd_HE_GP25", 3]]**</p>

Unit Addons and Configuring Group Vehicles

In **dgc_group_config** are all vehicles and units set to the desired sites and classes. Here you can add 3rd party addons if you want to use them.

Let's say you have a T80 addon and you like to create groups with them, open the **dgc_group_config.sqs** and look for this line:

_dgc_heavy_armored = ["T72"]

right now, only T72's will be created. Let's suppose that the classname of your T80 addon is "**DGC_T80**", add this into the array:

_dgc_heavy_armored = ["T72", "DGC_T80"]

Now you'll have randomly T72 and T80 created. If you don't want T72's anymore, remove it:

_dgc_heavy_armored = ["DGC_T80"]

You can assign each vehicle to each side. If you want Civilians to have T72's, add it into the "Civilian" part of the script.

TIP:
If you want to raise the chance to have a certain vehicle more than others, double it:

_dgc_heavy_armored = ["T72", "DGC_T80", "DGC_T80"]

This will double the chance of creating T80's

IMPORTANT!
You have to know the correct classname of a vehicle to add it! Mostly they are provided in the readme that came with the addon.

Adding Manual Waypoints

In each zone you can add manual waypoints. As the waypoints are generated randomly there's no guarantee that a certain area will ever see a patrol. But if you want have a certain area checked time by time (i.e. a radio tower or a bridge, places of strategic interest) you can add waypoints manually inside the zone but even outside of it.

Doing this is very simple:
Create a gamelogic somewhere inside the zone. Give the gamelogic waypoints as you would do for a Unit. Place them where you want to have them.

Create as many waypoints as you like. It doesn't matter if it's 2 or 20.
Only important thing: **the LAST waypoint has to be inside the zone OR the FIRST needs a timeout of 60 seconds**. These waypoints will be added to the randomly generated and also being used. **Restriction:** Only 1 gamelogic can be used per zone. If you use gamelogics for other things too, make sure they'll not interfere with the DGC gamelogic- place them outside the zones.

Creating Multiple Sides with One Trigger

The **dgc_zone.sqs** supports creating more than one side at the same time. Just add a new array, containing all from "SIDE" to "SPECOPS" and the behavior array. Below an example for creating **EAST** and **Civilians** in the same zone at the same time:

```
[objectname, zonesize, treshold_offset,
        [
                [EAST, [2,4],[3,6],[2,2],[5,7],[7,12],[3,8]],
                [Civilian, [],[],[],[],[5,9],[4,6],["", "", "GREEN", "", "",
""]],
        ]
] exec "dgc_reloaded\dgc_zone.sqs"
```

I've split it up in multiple lines for better reading, but it must be a single line in the initialization. This example will create a few armored vehicles, a few cars and several infantry groups on EAST side inside the zone. It will also create several groups of "pedestrians" inside the zone. Note that the Civilian side has customized behavior settings. Each side you create can have customized settings in each zone.

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===============

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