Introduction

The end of operations in Iraq and the rapid drawdown from Afghanistan has meant that many armoured fighting vehicles (AFV) are now being returned. Decisions are now being made as to whether to scrap these vehicles, pass them on to another party, or take them into the core army fleet.

In Europe and the United States, many original equipment manufacturers (OEMs) and their subcontractors have been heavily involved in not only providing new AFVs optimised to meet the operational requirements of Iraq and Afghanistan but also upgrading existing vehicles.

The main emphasis has been on providing an enhanced level of protection, especially against mines and improvised explosive devices (IEDs).

These urgent operational requirement (UOR) initiatives have provided a significant amount of work, not only for the OEMs but also government owned facilities and the many hundreds of subcontractors through the extended supply chain.

This work is now coming to an end and is expected to lead to even more consolidation in the land defence systems sector, including the AFV segment which has already seen significant changes over the last five years with many production and key research and development facilities closing down.

The withdrawal from Iraq and the rapid drawdown from Afghanistan will result in important cost savings but the prevailing economic conditions in most parts of the world mean that in Europe and North America, significant reductions in force structures are still taking place.

In-mid 2014 BAE Systems Combat Vehicles UK will close its last remaining AFV production facility at Newcastle-Upon-Tyne once the last Terrier combat engineer vehicle is delivered to the UK Royal Engineers.

Almost all of the UK AFV overhaul and upgrade work for British AFVs is carried out by the Defence Support Group (previously the Army Base Repair Organisation) which is now up for sale.

In France the two main contractors in the land sector, excluding the key electronics companies, are Nexter Systems and
Renault Trucks Defence (which now includes ACMAT and Panhard Defense).

**Main Battle Tanks**

The past year has seen a continuing decline in MBT fleets in Europe, with the Royal Netherlands Army phasing its upgraded Leopard 2A6 MBTs out of service.

Events taking place in the Crimea early in 2014 may be a wakeup call that defence budget cuts in many NATO countries have been too deep with many armies now having a serious lack in overall manoeuvre and strike capability.

**> Germany**

Krauss-Maffei Wegmann (KMW) is upgrading 20 older Leopard 2 MBTs up to the latest Leopard 2A7 standard for the German Army and, funding permitting, hopes to upgrade additional Leopard 2A6 to this enhanced standard in the future.

The Leopard 2A6/2A7 are both armed with the Rheinmetall 120 mm L/55 smoothbore gun while the older vehicles, up to the Leopard 2A5, have the shorter Rheinmetall 120 mm L/44. The longer L/55 barrel provides an additional 1,500 m range.

Although many have been sold to Poland to supplement its fleet of ex-German Army Leopard 2A4 MBTs, the German Army still operates 125 Leopard 2A5s.

KMW received a major boost in 2013 when the Emirate of Qatar placed a contract for 62 brand new Leopard 2A7 series MBTs plus 24 brand new PzH 2000 155 mm/52-calibre self-propelled (SP) artillery systems. This means that the Leopard 2 MBT production line will restart in Munich, opening up the possibility of additional export sales.

**> Russian Federation**

Russia has completed the first prototypes of its new Armata MBT, however this has yet to make its first public appearance. According to available information, this will be an unconventional design with the crew of three in the well protected hull with the main armament consisting of the latest generation 125 mm smoothbore gun fed by an automatic loader.

As with the current production T-90 MBT, the new Armata will have the capability to fire a laser-guided missile through the 125 mm smoothbore main armament, allowing targets to be engaged well beyond the range of the main armament itself.

During the Russian Arms Exhibition held in September 2013 (RAE 2013) Russia showed a number of new and upgraded vehicles for the first time, the upgrades aimed mainly at the export market. These included the latest BMPT-72 Terminator 2 Direct Fire Support Vehicle, based on a surplus T-72 MBT hull, and upgraded for its new role.

This has a crew of three rather than the five of the original BMPT; the two 30 mm automatic grenade launchers, mounted one either side of the driver, have been removed.

The original turret has been replaced by a new weapon system that is armed with twin externally mounted 30 mm 2A42 cannons, a 7.62 mm PKTM machine gun (MG), and two pods of two 9M120 laser-
guided missiles, with a maximum range of 6,000 m.

These weapons are laid onto the target using an advanced computerised day/night fire-control system (FCS) with the commander’s panoramic sighting system allowing hunter/killer target engagements to take place.

The all-welded steel hull and turret is fitted with an advanced armour package that includes the latest generation explosive reactive armour (ERA) and bar/slat armour to provide protection against rocket propelled grenades.

The Russian BMPT-72 Terminator 2 (image © IHS / Christopher F Foss)

The original BMPT Tank Support Combat Vehicle, with a crew of five, was developed to meet the requirements of the Russian Army. It is understood that it was not deployed, however Kazakhstan has taken delivery of a batch of 10 vehicles.

Late in 2013 Russia finally released its production figures for the widely deployed T-72 MBT; production was undertaken in Nizhny Tagil between 1973 through to 1990 with a total of 20,574 vehicles manufactured for the home and export markets.

In addition, Poland produced 1,610 T-72M1, while the former Czechoslovakia produced 1,782 T-72M1, for the home and export markets. Production was also undertaken in India and the former Yugoslavia in a modified form as the M-84.

It is worth remembering that the T-72 MBT was considered by Russia to be significantly behind the T-80 MBT in overall capability and the latter was not released for export for many years after it entered service with the Russian Army.

Unlike the T-72 MBT, the T-80 MBT was not issued to any members of the Warsaw Pact apart from Russia.

Also shown at RAE 2013 were two T-72 MBTs that had been upgraded in a number of areas, especially survivability, with these being aimed mainly at the export market.

> Turkey

Turkey already has the capability to design, develop, and manufacture light and medium tracked and wheeled AFVs, but has now moved into the heavier end of the market.

For many years Turkey has been upgrading older M48, M60, and Leopard 1 MBTs and now aims to be self-sufficient in MBTs as well.

Under contract to the Turkish Land Forces Command (TLFC), local company Otokar is now developing the Altay MBT, with the first two examples, the Firepower Test Rig (FTR) and the Mobility Test Rig (MTR) being completed late in 2012.

The Altay MBT (image © IHS / Christopher F Foss)
These will be followed by two pre-series Altay MBTs and a contract is expected to be awarded sometime in 2014 for an initial batch of 250 vehicles for the TLFC.

Unless KMW wins additional contracts for its Leopard 2A7 beyond the current contract for Qatar, the Turkish Altay MBT will be the only vehicle of its type in production in NATO.

Turkey has already had major export success with wide ranges of other tracked and wheeled AFVs; the Altay would well fill a gap in the MBT market without any political strings attached.

> United Kingdom

The British Army took delivery of 386 Challenger 2 MBTs from the then Vickers Defence Systems (now BAE Systems Combat Vehicles UK).

Under Army 2020 this fleet is now being cut to 227 Challenger 2 MBTs which will be issued to three regiments each with an authorised strength of 56 MBTs.

During peacetime, many of these Challenger 2 MBT will be stored as the British Army has introduced Joint Asset Management and Engineering Solutions (JAMES) across its vehicle fleet.

It was expected that the Challenger 2 would have had a major upgrade under the Challenger Capability Sustainment Programme (CSP), which would have included the replacement of the current 120 mm L30A1 rifled tank gun with the Rheinmetall 120 mm L/55 smoothbore gun.

This will no longer go ahead and effort is now being concentrated on the Challenger Life Extension Programme (LEP), which is far more limited in scope and will concentrate on replacing some key subsystems that are now obsolete.

At present there are no plans to replace the 120 mm L30A1 rifled gun with the Rheinmetall 120 mm L/55 smoothbore gun as part of the Challenger LEP, which could potentially leave the vehicle outgunned by some potential threat forces.

> United States

The US Army spent a huge sum of money on the Future Combat System (FCS) which included the Mounted Combat System as the replacement for the currently deployed General Dynamics Land Systems M1A1/M1A2 MBT.

This programme was cancelled and the M1A1/M1A2 will remain in service many years to some, probably to 2050 under current plans.

It is likely that a further block of enhancements will be carried out which could emerge as the M1A3 and this may include the replacement of the current AGT 1500 turbine with a more fuel efficient diesel MTU diesel engine.

Shown for the first time at the Association of the United States Army meeting in Washington DC in September 2013 was an M1 series hull with a new powered pack consisting of an MTU V-12 1,500 hp diesel coupled to an Allison automatic transmission and a new cooling system.

> Asia

Asian countries have been building up their AFV capability for many years, with
Malaysia taking delivery of brand new Polish PT-91M MBTs plus a complete range of supporting vehicles.

The Republic of Korea (ROK) has been self-sufficient in all types of AFV for many years, along with the K1 (105 mm) and K1A1 (120 mm) MBT, with an estimated 1,500 units built.

These have been followed in production by the K2 MBT that has many advanced features including a crew of three and being armed with a 120 mm L/55 smoothbore gun fed by a bustle mounted automatic loader.

Singapore has taken delivery of surplus German Army Leopard 2A4 MBTs from KMW and some of these have already been put through a major upgrade programme by Singapore Technologies Kinetics (STK). This upgrade included additional armour and probably a new FCS and air conditioning.

Late in 2013 Indonesia took delivery of the first batch of Leopard 2A4 MBTs and Marder 1A3 IFVs from Rheinmetall, with some of the former to be upgraded.

Early in 2014 an agreement was signed between the Indonesian and Turkish governments for the joint development of a new medium tank to meet the requirements of the Indonesian Army.

Turkish company FNSS Savunma Sistemleri A.S. will develop this medium tank in conjunction with the Indonesian company PT Pindad which has built over 150 Anoa (6 x 6) APCs for the Indonesian Army.

Reconnaissance Vehicles

While there is an increased emphasis on unmanned aerial vehicles (UAV) for the reconnaissance role, there is still a requirement for manned systems.

> Europe

In Europe there are two main manned reconnaissance platforms under development which, funding permitting, should enter service later this decade, the French L’Engin Blindé de Reconnaissance et de Combat (EBRC) and the UK Scout Specialist (Scout SV).

The EBRC is the replacement for the currently deployed Nexter Systems AMX-10RCR (6 x 6) armoured car armed with a 105 mm gun and the Panhard Defense Sagaie (6 x 6) armoured car armed with a 90 mm gun.

A request for information for the EBRC was issued in December 2013 and it is expected that this will be a French solution combining the experience of Nexter Systems, Renault Trucks, and Thales.

The French Army requirement is for 248 EBRC with a potential in service date of 2020.

It is expected that this will be a 6 x 6 vehicle and fitted with a two-person turret armed with a CTAI 40 mm Case Telescoped Weapon System (CTWS) and a 7.62 mm MG.

The turret could also be fitted with pods of anti-tank guided weapons (ATGWs), which would have direct and indirect fire capability.
Nexter Systems has already built the T40M two-person turret armed with the CTAI 40 mm CTWS, roof-mounted 7.62 mm RWS and a pod of ATGW either side. For trials purposes this has been installed on an AMX-10RC (6 × 6) armoured car hull with firing trials already under way.

Prime contractor for the Scout SV is General Dynamics UK with Lockheed Martin UK being responsible for the two-person turret armed with a CTAI 40 mm CTWS and 7.62 mm coaxial MG coupled to an advanced computerised FCS.

It will also have an advanced day/night surveillance system for its reconnaissance mission under almost all weather conditions.

The mobile test rig (MTR) has been running since mid-2012 and will be followed by the first six pre-series vehicles: three scout; one equipment support (repair); one equipment support (recovery); and one protected mobility reconnaissance support (PMRS).

While the German Army has deployed the General Dynamics European Land Systems (GDELS) MOWAG Eagle IV for several years Germany had a competition for the so called GFF 2 programme.

Following competitive trials between the KMW/Rheinmetall MAN Military Vehicles Armoured Multi Purpose Vehicle (AMPV) and the latest GDELS – MOWAG Eagle V, the latter was selected to meet the requirements of the German Army.

A contract was placed for 100 vehicles in mid-2013 followed by an additional 76 vehicles in March 2014 and this will extend production of the Eagle V through to at least late 2015 and will complete the German Army GFF 2 requirement.

Although the AMPV lost the German Army competition, it is still being marketed and was shown late in 2013 in the specialised reconnaissance role fitted with a mast-mounted pod that included day/night sensors and a battlefield surveillance radar.

FNSS Savunma Sistemleri has expanded its range of tracked vehicles with the development of the Kaplan weapon carrier and reconnaissance vehicle with a representative platform being show in mid-2013.

This compact tracked vehicle is fitted with a remote controlled turret armed with a .50 M2 HB MG and a pod of two Roketsan medium range ATGW either side to enable targets to be engaged at a longer range.

The Kaplan has a typical weight of around 11 tonnes, depending on the...
weapon/surveillance system installed and with a maximum crew of five.

Operating range is currently being quoted as 600 km, a maximum speed of 70 km/h, and a good power-to-weight ratio of 25 hp/tonne.

The example of the Kaplan shown in mid-2013 was also fitted with rubber band tracks; these offer a number of significant advantages including a reduction in weight, lower acoustic signature, and a significant reduction in vibration.

In the past wheeled vehicles used for the reconnaissance role were typically called scout cars with the more heavily armed and protected vehicles being referred to as armoured cars.

While these terms are still used by some countries some of the more recent armoured cars armed with a larger calibre 105 mm gun are sometimes referred to as mobile gun systems (MGS).

The Italian Army has taken delivery of 400 C1O Centauro (8 × 8) MGS fitted with a three person turret armed with a 105 mm rifled gun and 84 have been supplied to Spain.

Surplus Italian Army vehicles are expected to be acquired by Jordan in the near future.

Oman has taken delivery of a batch of nine Centauro (8 × 8) MGS armed with an Oto Melara 120 mm smoothbore gun.

Currently under development for the Italian Army is Centauro 2, which will feature a new design hull with a higher level of protection and a new turret armed with an Oto Melara 120 mm smoothbore gun coupled to a computerised FCS with a hunter/killer target engagement capability.

> Japan

In late 2013 Japan revealed a very similar vehicle to the first generation Centauro (8 × 8) MGS – the 105 mm Kidon Maneuver Combat Vehicle (MCV) – with first prototypes already being tested.

This 8 × 8 vehicle weighs around 26 tonnes and is fitted with a three person turret armed with a 105 mm gun that is coupled to a computerised FCS.

Under current plans the Kidon MCV it is expected to enter service from 2016 and will supplement the Type 10 and Type 90 MBTs armed with a 120 mm smoothbore gun currently used by Japan.

The 105 mm Kidon MCV will have greater strategic mobility and will be able to be more rapidly deployed by land, sea and air than the Type 10 and Type 90 MBT currently deployed by Japan.

> United States

The US Army has deployed larger numbers of its General Dynamics Land Systems (GDLS) Stryker (8 × 8) family of vehicles (FOV) with the latest model having the so called double V-hull for enhanced protection against mines and IED.

There is also the M1128 Mobile Gun System, fitted with a low profile two-person turret and armed with a 105 mm M68A2 rifled gun fed by an automatic loader.
This has only been in low rate production and is normally used in the direct fire role rather than being a reconnaissance vehicle.

Within the Stryker FOV is the M1127, a dedicated reconnaissance vehicle fitted with a suite of day/night sensors and a Kongsberg Protector RWS.

Armoured Personnel Carriers – Tracked

While a number of countries have moved to an all-wheeled fleet of AFVs, with the exception of MBTs, many users are still deploying fleets of tracked and wheeled APCs and the more well-armed IFVs.

> Russian Federation

The Russian Army has always deployed a mix of tracked and 8 × 8 vehicles; now undergoing trials is the Kurganets IFV, which has been designed and built by the Kurganmashzavod Joint Stock Company (JSC).

This was not shown at the RAE 2013, however it is understood to be a fully tracked vehicle with a combat weight of around 25 tonnes and will form the basis for a complete family of tracked combat vehicles.

The IFV version is expected to be armed with a remote controlled turret with a 30 mm dual feed cannon, 7.62 mm coaxial MG, and a roof-mounted laser-guided ATGW either side. Another version is expected to be armed with a 57 mm dual feed cannon.

Kurganets is the follow-on to the Russian BMP-3 IFV, which has had significant export success with sales being made to Algeria (unconfirmed), Cyprus, Indonesia, Kazakhstan, Kuwait, Republic of Korea, United Arab Emirates and Venezuela.

Total production of the BMP-3 IFV for the Russian Army is estimated to have been around 500 to 600 units with large numbers of the older BMP-2 and BMP-1 IFV still being deployed.

At RAE 2013 Russia did show the latest Kurganmashzavod JSC BTR-MDM airborne APC, a follow on to the BTR-D airborne APC currently used by Russian airborne units.

The BTR-MDM is armed with a bow mounted 7.62 mm MG, roof mounted 12.7 mm MG and banks of grenade launchers.

This is expected to be developed into a complete FOV along similar lines to those developed for the currently BTR-D.

Like the earlier BTR-D it is fully amphibious being propelled in the water by two water jets situated one either side low down at the rear.

Its main disadvantage is that the troops have to exit the vehicle via hatches in the roof as the power pack is at the rear.

> Sweden

The CV9040 IFV was originally developed to meet the requirements of the Swedish Army with Hägglunds being responsible for the hull and Bofors for the two-person turret armed with a Bofors 40 mm L/70 cannon and 7.62 mm coaxial MG.

The Swedish Army took delivery of a total of 509 CV9040 IFVs and variants plus 40 hulls which were to be fitted with the AMOS twin 120 mm mortar turret before
Sweden pulled out of the programme and these hulls are now stored.

Final deliveries of CV9040 IFVs were made to the Swedish Army in 2002. It is expected that sometime in 2014 the Swedish Defence Material Administration will award BAE Systems a contract to refurbish up to 365 CV9040 IFVs to extend their operational lives to at 2030.

For the export market BAE Systems Hägglunds continued development of the CV90 and sales have now been made to Denmark (45), Finland (102), Norway (104), Netherlands (184) and Switzerland (186).

> Norway

In mid-2012 BAE Systems Hägglunds signed a contract with Norway worth approximately USD835 million to provide the Norwegian Army with a total fleet of 144 new and upgraded CV9030 series vehicles. The new build vehicles will feature the latest CV90 Mk III hull.

The first of two pre-series vehicles was handed over on schedule late in February 2014 with the main production run taking place from 2015 through to 2017 and with a significant amount of the integration work taking place in Norway.

All of the Norwegian vehicles will be fitted with an electronic architecture and Soucy International rubber band tracks.

When the programme is complete, the Norwegian Army CV9030N fleet will consist of 74 IFVs, 21 reconnaissance vehicles with a mast mounted surveillance package, 15 command post vehicles, 16 engineer vehicles, 16 multirole vehicles and two driver training vehicles.

The multirole vehicles can be reconfigured for different roles according to mission requirements including logistic support and mortar platform.

> United Kingdom

The BAE Systems Hägglunds BvS 10 armoured all-terrain vehicle was developed in close co-operation with the UK Royal Marines to meet their requirements for an All-Terrain Vehicle (Protected) for use by 3 Commando Brigade.

The UK took delivery of 190 BvS 10 vehicles which included the more recent Mk II to replace vehicles lost on operations in Afghanistan.

The BvS 10 was originally deployed by the Royal Marines in Afghanistan and these vehicles were then taken over by the British Army and operated by the Royal Armoured Corps.

Under a GBP37.8 million (USD61.1 million) contract placed in late 2012 BAE Systems is upgrading 99 BvS 10 vehicles to the Mk II configuration with first vehicles handed over in mid-2013.

In addition to the troop carrying variant, command and repair versions two new versions are now being deployed, 81 mm mortar and crew served weapon.

The BvS 10 is also in service with France and the Netherlands, and following a competition with the Singapore Technologies Kinetics Bronco, the BvS 10 was selected by Sweden.

The first contract was for 48 vehicles and was followed in December 2013 by a second contract for an additional 102
vehicles; all of these are due to be delivered by the end of 2015.

One of the two highest priority British Army programmes is the Warrior Capability Sustainment Programme (WCSP) which aims to extend the life of the BAE Systems Warrior IFV to at least 2030/2035.

Prime contractor for the WCSP is Lockheed Martin UK, which is also developing the turret for the General Dynamics UK Specialist Vehicle – Scout with both of these turrets to be armed with a CTAI 40 mm CTWS and 7.62 mm coaxial MG.

Lockheed Martin UK completed the Preliminary Design Review early in 2014, later than originally expected, and with first firing trials due in the second quarter of 2014.

It remains to be seen as to whether the projected in service date of the WCSP is achieved. When it is fielded it will provide the British Army armoured infantry battalions with a step change in capability.

> United States

Today the BAE Systems M2 IFV Bradley is the standard vehicle of the US infantry and has gone through a number of upgrades since the first vehicle rolled off the production line in San Jose as far back as 1995.

Since then it has gone through numerous upgrades with the latest version being the Bradley M2A3, but all retain the ATK Armament Systems 25 mm M242 cannon and 7.62 mm coaxial MG.

This should have been replaced by a member of the Future Combat System but this major and expensive programme was cancelled after the expenditure of billions of dollars.

BAE Systems and General Dynamics Land Systems were both then awarded contracts for the Ground Combat Vehicle (GCV) technology development phase.

It was expected that up to 1,874 GCVs would originally be procured but the latest news is that the programme has been all but cancelled, with minimal funding to close out development work completed to date. The US Army intends to revisit the requirement in the future, however this will not happen for at least three or four years.

The requirement was for a vehicle with a high level of protection, a crew of three with room for nine dismounts, a high level of protection, and a GVW of at least 60 tonnes.

The US Army still deploys a large number of M113 series tracked vehicles and these are to be replaced by the AMPV which now has a higher priority.

The AMPV is an on-going competition with one of the contenders being a re-rolled Bradley. BAE Systems has already shown examples of the Bradley for these roles including command post, mortar carrier and armoured medical treatment vehicle.

This Annual Review is abridged. The full analysis is available within IHS Jane’s Defence Equipment & Technology Intelligence Centre and IHS Jane’s Land Warfare Platforms: Armoured Fighting Vehicles.
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