

REVIEWS

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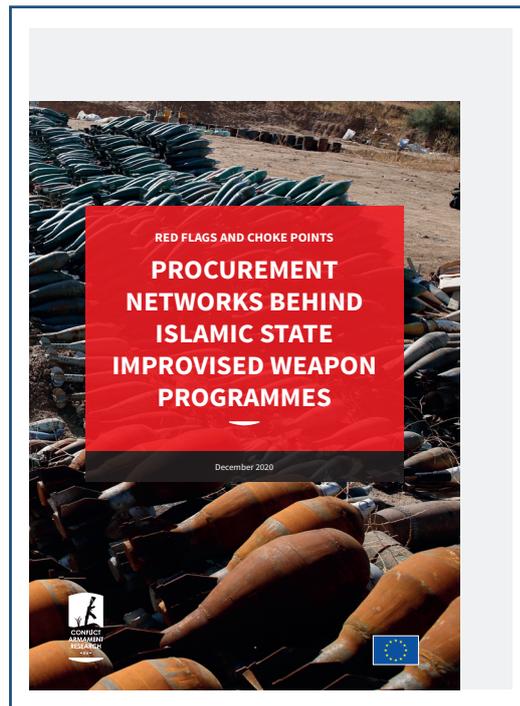


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PROCUREMENT NETWORKS BEHIND ISLAMIC STATE IMPROVISED WEAPON PROGRAMMES



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PROCUREMENT NETWORKS BEHIND ISLAMIC STATE IMPROVISED WEAPON PROGRAMMES

The ignominious defeat inflicted on ISIS has shown the prowess and finesse of the international coalition, under which 83 countries and international organizations are subsumed, operating in concert to successfully eliminate the alleged statehood it once established in Iraq and Syria. However, Fears are creeping over the international community that ISIS will mushroom again into reality more vehemently, albeit reduced down and dwarfed into 1% of the defunct statehood; it made last-ditch attempts manifested in more than a hundred attacks launched in northeastern Syria in January 2021. How did ISIS manage to control the territory in Iraq and Syria more than twice the size of Lebanon? How did ISIS build its military structures? Several research studies have attempted to investigate and address such probing questions, including this international report PROCUREMENT NETWORKS BEHIND ISLAMIC STATE IMPROVISED WEAPON PROGRAMMES developed by the Conflict Armament Research (CAR) 2020 for the European Union; it examines meticulously hidden aspects of ISIS armament and ammunition programs that extended its supply lines to various countries in the Middle East and Europe, and helped it establish the so-called statehood.

Introduction

This report traces the supply sources of armament and ammunition of ISIS between 2014 and 2017, and how it established one of the most sophisticated production capabilities for improvised weapons and improvised explosive devices (IEDs) of any non-state group to date. It instrumentalized any materials, such as scrap materials and common household chemicals (detergents, etc.) readily made available in traditional stores.

Through international supply chains, ISIS owned a production base for the production of semi-industrial weapons in the IS-held territory, as the international coalition forces that fought off ISIS at the time seized IEDs and weapons manufactured in Europe and Asia.

The field investigations made by CAR in Iraq and Syria sought to map these international supply chains. Drawing on such meticulous investigations, CAR identified more than 50 companies, in over 20 countries, that produced or distributed goods subsequently used by ISIS forces to make IEDs, unmanned aerial vehicle (UAVs), and improvised weapon systems.

Such companies included manufacturers and distributors of chemicals used in the production of explosives or chemical agents along with manufacturers of items used as containers for IEDs, producers of commercial explosives, companies making products of electronic components, as well as off-the-shelf UAV systems made up of commercialized items.

Field investigators documented more than 40,000 weapons, ammunition, and traceable IED components recovered from ISIS in Iraq and Syria. Since 2019, they have tried to identify the methods of transferring key elements of such weapons from regional distributors to ISIS weaponry production facilities. The investigators revealed the production methods of ISIS procurement networks and determined the pattern in which these networks came into reality to assist manufacturers, distributors, and service providers in identifying the red flags of suspicious procurement operations and destination diversions by similar or affiliated groups.

The report pays a detailed attention to the methods in which buyers presented themselves to commercial manufacturers and distributors, the nature of contacts, the methods of payment used, and how goods were transported. The report examines a selection of five

key commodity groups used by ISIS to manufacture explosives and weapons:

- ◆ Nitrate-based fertilizers, used to produce homemade explosives (HME)
- ◆ Aluminum paste, also used to produce HME.
- ◆ Sorbitol, used to produce rocket propellant.
- ◆ Commercial UAVs, which IS forces used in large numbers for surveillance, indirect fire guidance, and to deliver small IEDs.
- ◆ Items procured for the development or manufacture of specialized UAVs, including engines, component designs, optical systems, and bespoke software.

Report Information Sources

The investigations made by CAR to gather information for this report began with the official tracing of commercial goods and components, carried out by field investigation teams in abandoned arms factories for ISIS forces, and documented following the discovery of IEDs and improvised weapons resulting from the accidents in which these elements were used.

To identify subsequent transfers of such items, CAR interviewed suppliers and buyers in Europe, the Middle East, and North America, obtained documents of sales, customs, and transportation, examined internal documentation for ISIS forces themselves, reviewed court records in Denmark, Turkey, and the United States, and identified several companies and people from Hong Kong, United Kingdom, UAE, Lebanon and Turkey.

The investigation teams documented illegal weapons and ammunition, and related materiel in conflict areas, and traced their sources of supply. It further examined ISIS weapons obtained by government security forces, which were handed over at the ceasefire, and supported such documentation with telling photographs, verified the date and locations of documentation, and added contextual data derived from interviews conducted by investigators with the forces controlling those elements at the date of documentation.

CAR traced back only part of the items it had documented in the field, which is of particular importance to the investigations. In the event of many items being traceable, the national governments and manufacturers involved would be overburdened, and

some documented items were not traceable, such as most small-caliber unwrapped munitions; such items do not carry the operating numbers necessary for identification in the records of production, sale and export. This also means the records of production, sale and export of many old weapons are no longer available.

Investigators meticulously traced official weapons, analyzed physical evidence collected from weapons and related materiel, obtained government and commercial documents, transfer documents, etc., and interviewed persons with information on transfers of materiel under investigation and scrutiny.

To this effect, CAR archived all documents, observations, interviews, emails, video recordings, photographs, and other third-party data. To protect CAR sources, it does not publish all the details related to the sources or the circumstances in which it obtained some items. The sources made all these items available voluntarily and knowingly. For privacy purposes, CAR guaranteed anonymity unless otherwise public officials.

The Report indicates that unless otherwise specified, no reference to the names of countries of manufacture, manufacturing companies, intermediary parties,

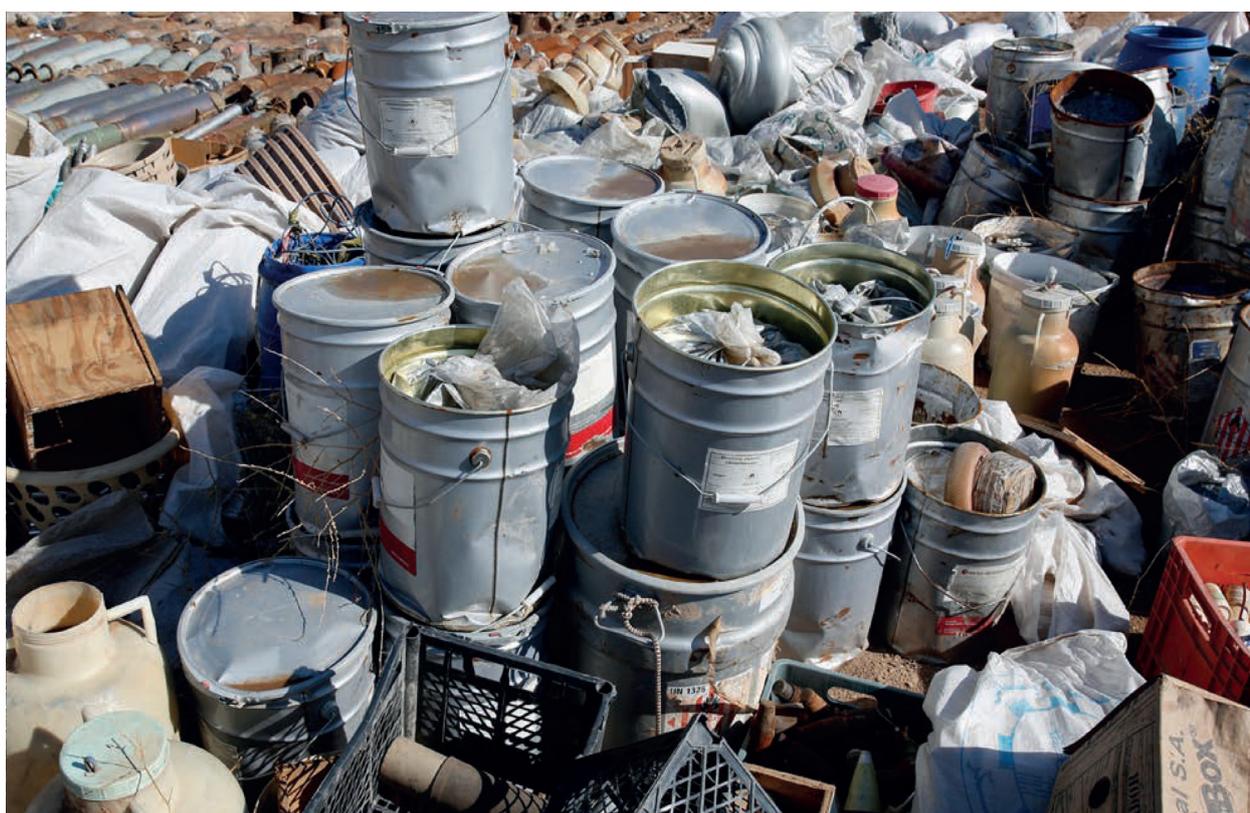
distributors, intended end users, or other individuals or companies implies illegality or wrongdoing on the part of the named entity.

Aluminum Paste

The weapon production by the ISIS forces requires that individuals, working in collaborative networks, are able to make retail or wholesale purchases, operate registered companies or other legal entities to front large purchases and payments, arrange logistics for the delivery of goods into IS territory, and move money through bank transfers or online payment systems. ISIS forces used individuals and companies based in Denmark, Spain, Syria, Turkey, and the UK to fulfil these functions.

Equally important, CAR field investigation teams documented between 2015 and 2017 more than one hundred drums of Chinese-manufactured leafing aluminum paste; they were found stashed in six separate explosives production sites camouflaged and set up by IS forces, and all of the drums had been manufactured by one single company.

All containers bear labels indicating that they are sold exclusively to one chemical distributor in Istanbul, and there is no indication that this distributor was in any way complicit in supplying them to ISIS, or that such



a distributor was involved in any other wrongdoing. The Istanbul-based distributor did not record sales by lot or batch number prior to 2018. Therefore, the distributor could not definitively identify the purchasers of the lots that CAR documented in Iraq. However, in reviewing its list of customers that had purchased leafing aluminum paste since 2013, the distributor noted one particular sale as unusual: a large order in late 2014 or early 2015 for 6 tons of aluminum paste, which came from an information technology store. This quantity was the first and only that the store concluded with this distributor. The company limited its business to the import and export of mobile phones, and the company was an unusual buyer of large quantities of leafing aluminum paste.

CAR has established that in July 2015, the owner, two of his brothers, and four other men, were arrested four months into the police surveillance, and charged with membership of an armed terrorist organisation, and possessing and exchanging unauthorized dangerous substances. CAR was unable to determine whether the charges related to the aluminum paste sales. Turkish court records indicate that these seven men have been under criminal prosecution since February 10, 2016.

The brother of the owner of the company confirmed to CAR that he was imprisoned and released after 17 months, claiming that this was due to his inability to provide sales records and client lists to prove his acquittal. The company was dissolved on October 21, 2019. On November 18, 2019, the US Treasury sanctioned two people with the same names of the owner of the company and his brother, in addition to an associated company. The US Treasury alleged that these individuals and the company had supplied ISIS with equipment in 2015 and 2017 and acted as an ISIS procurement agent. Evidence gathered by CAR suggests that the individuals are not the same as those who operated the company but are a cousin and an uncle with the same names, who were not involved with the company. The US government has not, at the time of writing, sanctioned the company involved.

In December 2014, one of SIFUL HAQUE SUJAN's UK companies, IBACSTEL ELECTRONICS LTD, purchased a micro-turbine engine from a German supplier of turbines and civilian UAVs. IBACSTEL paid EUR 2,400 for the micro-turbine by means of a bank transfer

from its bank account. The company had business in electronic point of sale systems for restaurants and retail companies, and it had no apparent relationship with drones. The criminal trials in the United States and Spain have established that SIFUL HAQUE SUJAN was associated with IS forces. According to the FBI, he had travelled to Raqqa, Syria, in mid-2014 and acted as an IT and weapon specialist for IS forces.

The US Air Force claims that a US-led coalition airstrike killed SIFUL HAQUE SUJAN in Raqqa, 10 December 2015. SUJAN's brother was arrested in Spain on 22 September 2017. On 27 April 2020 he was found guilty of funneling money to an ISIS-aligned individual in the United States for the purposes of preparing a terrorist attack.

Fertilizer-Based Explosive Industry

CAR investigations have identified a second family grouping connected to the supply chain for ammonium nitrate fertilizer and sorbitol, used by the ISIS forces in Iraq used to produce HME and rocket propellant.

CAR has no evidence that the said second family grouping, or the companies that it owns, knowingly supplied the ISIS forces; CAR has no evidence that it was complicit in trafficking goods across the Turkish-Syrian border; CAR has no evidence that it was engaged in any other wrongdoing. Nevertheless, their position (however unwitting) in ISIS procurement chains underlines how tight family groupings have been central to the cross-border trade that the ISIS forces instrumentalized to sustain military production.

The widely publicized photographs taken at the AKÇAKALE border gate on 27 April 2015, verified by CAR through interviews, reveal local porters transporting several hundred sacks of VITAGRO with 33% of high-nitrate ammonium nitrate fertilizer from the Turkish side of the border to the then ISIS-controlled town of TAL ABYAD on the Syrian side of the border. Journalists bore witness to these transfers on two different days within the same week and interviewed local residents, who claimed that such cross-border movements of ammonium nitrate fertilizer had been taking place for several months.

The Turkish authorities in ŞANLIURFA told journalists that Syrian nationals while returning from Turkey to Syria through the AKÇAKALE border gate could cross with 30-40 sacks of low-nitrate fertilizer. Of note, low-nitrate fertilizer can be used in the production of



HME after significant processing, while high-nitrate fertilizer is much easier to use in HME production, which explains its prohibition in many countries).

Following media reports of the cross-border movement of high-nitrate fertilizer, the local authorities in AKÇAKALE border gate prevented the passage of such goods. However, this gate was not the only crossing point in Turkey used by the supply networks of ISIS forces. The photographs taken in April 2015 show unidentified men on the banks of the BALIKH River, south of the Turkish-Syrian border, about four kilometers east of the AKÇAKALE border gate, busy recovering gas canisters and various chemical products inside the plastic canisters, including nitrocellulose and aluminum leafing paste.

The images suggest that while large-scale smuggling was underway at the AKÇAKALE border gate until April 2015, smugglers were at the same time using the waterways in the area to transport explosive materials across the Turkish-Syrian border. In June 2015, IS forces released propaganda images that purported to show an IS-operated HME production facility in Fallujah, Iraq. The images show sacks of VITAGRO ammonium nitrate.

On October 10, 2015, Turkey imposed additional requirements on distributors of high-nitrate fertilizer (which contains 33% or more nitrogen),

including identification of the buyer, requiring distributors to submit sales records to provincial and regional authorities regularly. Following a series of car bombings in Turkey in June 2016, the Turkish government banned the domestic sale of high-nitrate fertilizer completely.

Drone Industry

If chemical supply chains are a risk due to diversion of destination by suppliers of common industrial products, ISIS efforts to develop new improvised weapon systems are also a risk for suppliers of high-tech products and specialized technical services.

Weapon specialists of terrorist organization gained expertise, built systems and developed programs by engaging suppliers without unknowingly knowledge, and built functional models using materials and components they were partly supplied through networks. Unlike personal and local family-based group procurement arrangements, ISIS weapon designers sought to exploit global and electronic markets for devices and expertise.

ISIS has used drones in Iraq and Syria since 2016; it has taken great care of small electric-powered helicopters, made available in commercial markets around the world. The vast majority of the sampled drones (28 drones) documented by CAR in Iraq and Syria are empowered by four-propellers, Chinese-



made, obtained by the Iraqi defense and security units in operations launched against ISIS forces between December 2016 and September 2019. The technicians of ISIS introduced modifications to some drones to drop modified types of conventional munitions or IEDs at ground targets.

In contrast to the purchases of primary chemicals and other components made by some wholesale buyers directly from regional distributors, the procurement of quadcopters relied on many suppliers, possibly being widely available at retailers and the higher cost of each, making bulk purchases require large, formal, and traceable bank transfers.

CAR traced seven quadcopters captured by the ISIS forces in Iraq to independent distributors in Kuwait, Lebanon, Singapore, Turkey and Uzbekistan. CAR has traced some of these drones to subsequent sales in Iraq and the United Arab Emirates.

The question of how they reached the ISIS forces remains a mystery.

In November 2015, a Lebanese distributor sold one of these drones to an Iraqi company specialized in information technology in Baghdad; it was part of five shipments of 21 drones, between August 2015 and March 2016. In the same month, the US Treasury sanctioned the Lebanese company and the CEO,

claiming that the company acted as a procurement agent for Hezbollah and had purchased drones, accessories, and various electronic equipment from companies in the United States, Europe, Asia, and the Middle East.

A distributor in Singapore received two drones documented in Iraq, and sold one in August 2016, in a sale of 150 quadcopters to a sales company, which informed CAR that it sold all of their quadcopter UAVs individually to cash-paying retail customers via a trading center. It stated that it did not maintain records of UAV customers or of the UAV serial numbers that customers had purchased during a period of peak demand in late 2015 and 2016, and that this trading volume declined thereafter.

Of note, the Chinese manufacturer of such drones listed and documented them as digital cameras, making tracking international shipments of such drones using customs data more difficult.

Since 2015, the ISIS technologists have also sought to develop larger and faster drones powered by a pulse-jet engine, a type of engine originally developed for V1 cruise missiles as flying bombs in World War II; it is no longer used in larger aircraft since the 1950s, after the rapid progress in the designs of the turbojet engine.

In August 2015, a person from a technology company purchased online designs for a larger pulse jet engine, equipped with a valve with a thrust of about 222 Newtons (50 pounds) from an American company for advanced hobbyists and sent an e-mail to the owner of the company to inquire about if the engine can be used to power a 40-kg aircraft.

During their occupation of Mosul, the ISIS forces had used the Al Shifa Hospital Complex as a storage site to stash away weapon and ammunition, and as a production facility for airborne IEDs and a range of other weapons and ammunition. In September 2017, an unexploded ordnance and IED clearance operation found a fully constructed pulsejet engine. The engine measured more than 2 meters in length and featured a machined air-intake head, and a motorbike spark plug for ignition.

The recovered pulsejet differs somewhat from other designs. Designs for daisy-valve pulsejets are available from several online sources and specialist suppliers in the United States and Europe.

Other field observations showed the efforts of the ISIS forces in making drones larger than those available in commercial markets, used in their operations in Syria and Iraq. CAR field researchers have documented many drone components in ISIS factories in Mosul and Ramadi.

Development of Anti-Aircraft Systems

In 2015, ISIS weapon developers sought to design an air-optical tracking system, as the basis for an automated anti-aircraft system. A fictitious UK-registered company set up by a weapon designer for ISIS concluded contracts with suppliers in North America and Asia for software and machine vision devices, such as high-specification cameras and motion control units, for the fictitious purpose of developing an optical system to detect flying objects, such as weather balloons, and recording their locations, according to the company's claim in one of the contracts, and the company expanded this ostensible purpose to include monitoring the airspace of farmland airspace for monitoring crop spraying.

The real goal was to use cameras mounted on moving platforms, and when the system identifies a flying object, all the cameras in the system identify and track such an object, using physically using heavy-duty pan and tilt motion-control units. The representatives of the fictitious company carefully concealed their identities and any military intent to use the system, as they communicated with contractors and suppliers only via e-mail and third-party websites, and VOIP calls.

The company used three pseudonymous email addresses. It also paid suppliers primarily via money transfer companies made by an individual in Hong



Kong whom CAR has not yet been able to identify. On one occasion, the company had to make a cash payment of \$18,000 to a North American hardware supplier via a direct bank transfer.

A bank transfer may have been necessary because other transfer methods, such as cash transfers or PayPal, would have required verification of the sender's identity in view of the large sum. The company representative informed the supplier that the bank transfer would come from one of their companies in the UK or Hong Kong. The supplier received a payment from the Turkish bank account of an unrelated company in Istanbul; a Turkish national originally had registered this company five months earlier, in January 2015, and it has ostensibly operated in Istanbul as a luxury car-hire business . Although meticulous investigations were carried out, CAR has no evidence that this company or its owner were aware of ISIS procurers' involvement in this transaction or engaged in any wrongdoing.

Although this example demonstrates the technical ambition and global dimension of the ISIS weapon development efforts, CAR has not found conclusive evidence that the system is complete, with some suppliers ending their contracts prematurely, after they became suspicious of the identity and intentions

of the fictitious company.

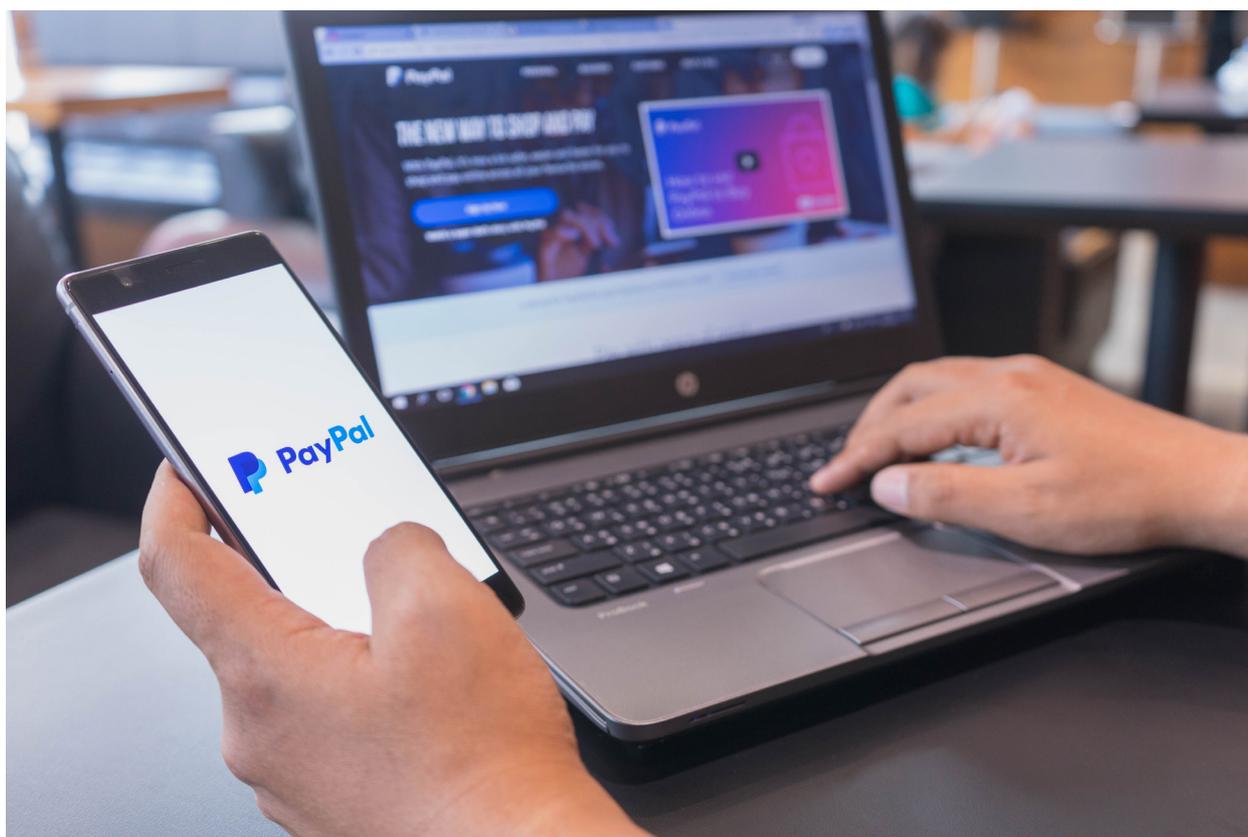
Conclusion

The cross-border supply chains destined for areas of Syria outside of government control, including explosive precursor chemicals, and electronic components used by the ISIS forces, centralized procurement, receipt and subsequent transfer of various goods by family networks along the Turkish-Syrian border. Product orders and payments showed many unfamiliar patterns due to the way customers presented themselves and the methods they used to pay for products and services.

The efforts made by ISIS evinced its ambitions to acquire technology and expertise to develop new weapons systems and patterns (red flags) that indicate illegal activity. Taken together, however, they indicate that individuals and companies may operate outside their usual business, as they may cooperate for purposes other than those related to their publicly visible business. There is no certainty that these purposes were outrageous, yet these transactions call for increased due diligence.

Small groups of individuals and companies connected by family ties acted as conduits for goods within multiple supply chains which ISIS forces accessed. These purchasers and consignees were not fully





visible to the international producers and suppliers of these goods. In most cases, they were only visible to national or regional distributors, one level down the supply chain. Combined together, even if major producers or suppliers had shared information globally about suspicious purchases, they may not have been able to identify these family groupings and their interrelations.

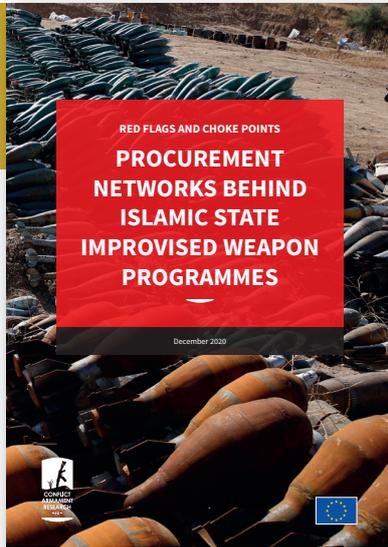
The report developed by CAR does not to blame manufacturers or dis-tributors. On their own, none of the red flags would decisively have indicated illicit or military-related procurement. However, they may cumulatively indicate the need for suppliers to conduct additional due diligence.

The telling examples cited in this report indicate that the ISIS procurers did not rely solely on local personal networks; rather, it used global business platforms for e-commerce and recruitment. While interpersonal trust may be important for the first type, the ISIS forces have exploited the relative anonymity that characterizes the second type. Regulatory buyers made payments in small amounts via PayPal or international cash transfers and used pseudonymous email addresses and messaging software applications to communicate with potential

suppliers and contractors who might be accustomed to working with international customers. Messaging is the basis for communication.

Some online contracting platforms do not verify the authenticity of buyers or sellers' data. The ISIS buyers successfully dealt with suppliers using a fictitious company registered in the names of fictitious directors and shareholders, and their identities were not verified with the UK Companies Registry. In addition to due diligence in the private sector, customs and government trade departments may be able to detect anomalies in cross-border commerce operations, relating to commodities such as aluminum paste or sorbitol, particularly if exports or imports of several types of primary chemicals significantly increased simultaneously.

Of note, the supply chains described in this report were not dependent on territorial control, the appropriation of goods or commercial facilities. Therefore, even though the ISIS forces no longer control the territory, its remaining clandestine cells lurking in Iraq and Syria have become more active. Spotting transactional red flags to disrupt the efforts to arm ISIS will remain an important tool to nip in the bud the ISIS redux or the resurgence of its successors and affiliates.



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