

# Building an “Outer Space Silk Road”: China’s Beidou Navigation Satellite System in the Arab World

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**Abstract:** *Navigation satellite systems are the symbols of states’ hard power, and so are the assets of science and technology diplomacy. In the new era, the structure of great powers’ navigation satellite systems is characterized by “one superpower” (the US GPS), “multi-pillars” (EU’s Galileo, Russian GLONASS and Chinese Beidou), and “multi-centers” (Indian regional navigation satellite system and Japanese quasi zenith navigation satellite system). Beidou is of great significance to promoting “One Belt and One Road” Initiative in the Arab world, and the essential measures to deepen the strategic partnership between China and the Arab League in inter-connectivity; it will also be an essential step for Beidou’s “going global” strategy in the long run. The implementation of Beidou’s projects in the Arab world is confronted with four dimensions of challenges of political,*

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*security, judicial and socio-cultural risks. Its implementation follows an incremental principle, choose pivotal states, create a radiation effect, which will lay a foundation for Beidou to open the West Asian and African market in the years to come.*

**Key Words:** *Beidou Navigation Satellite; One Belt and One Road; China and the Arab Countries; Science and Technology Diplomacy; the New Silk Road*

In June 2014, Chinese President Xi Jinping attended the sixth session of the ministerial meeting of the China-Arab States Cooperation Forum. During the meeting, Xi put forward the strategic concept of China-Arab cooperation mode of “1 + 2 + 3”, with the “3” including nuclear energy, aerospace and satellite, and new energy. President Xi made it clear that efforts should be made to implement China’s Beidou Navigation Satellite system in the Arab world” (Xi, J., 2014: June 5). In 2016, the seventh session of the Ministerial Conference of the China-Arab State Cooperation Forum was held in Doha, Qatar; through consultations, China and Arab countries unanimously decided to hold the first China-Arab Beidou Cooperation Forum and finally issued a joint declaration. The implementation of Beidou system in the Arab world is so far still at a preliminary stage, but the system is a strategic support and diplomatic resource for China to “look westward” in the new period, to carry out the “One Belt and One Road” Initiative and to build a comprehensive strategic partnership with the Arab League.

The 22 member states of the Arab League have a population of nearly 400 million with divergent national conditions; the Gulf countries, such as Saudi Arabia, the United Arab Emirates (UAE), Qatar and Kuwait boast abundant petrodollars; Egypt, Algeria and Morocco, albeit low in per capita GDP, have large population and market potentials, which has created good external conditions for the promotion of the Beidou system in the Arab world.

## **I. Strategic Opportunities for the Beidou System to Take Roots in the Arab World**

China's Beidou system is quite young compared with the US GPS system. However, it is gaining great momentum. The promotion of Beidou Navigation Satellite system in the Arab world is an important component of the "One Belt and One Road" Initiative; it is an important measure to deepen the strategic partnership between China and the Arab world and to realize the "mutual connectivity and communication" between the two sides. The Beidou system is also an important element of "going out" strategy to realize Beijing's global blueprint of the 13<sup>th</sup> Five-Year Plan.

With the consistent expansion of the Beidou system's overseas markets, China's image has evolved from a traditional one to a modern one. Chinese culture is no longer confined to the traditional elements such as Chinese knot, Chinese opera, calligraphy, porcelain, paper cutting, and shadow play; the leaps and bounds of China's high-tech industries have added modern features to the traditional ones, the former being the high-speed railway, nuclear power, aerospace technology and the Beidou system, among others. China is marching forward from a backward country to a great power of science and technology, which has brought a wealth of resources and content to China's diplomacy. China's diplomacy, in return, has continued to be more mature for the promotion of the Beidou system in the Arab world.

First, the Arab world enjoys a vast area and great potential market. As an important group of the Organization of Islamic Cooperation, the 22 Arab countries cover an area of 14.26 million square kilometers, accounting for 9.5% of the world total; the population in the Arab countries grows rapidly--it has reached nearly 400 million, making up 5% of the total of the world's

population, with the Egyptian population reaching over 90 million. Young people below the age of 30 account for 60% to 70% of the total population of the Arab world; Egypt, Algeria, Sudan, Iraq, Morocco and Saudi Arabia are the most populous countries in the region. They have more demands for the Beidou system in hydrology, meteorology, agriculture, fishery, infrastructure, transportation and other domains.

Second, the Beidou system is of great significance to the development of industries in the Arab world. Arab countries have the following features: firstly, Arabs constitute the main ethnic group, but countries vary in political systems, development paths, and the level of economic advancement, as well as the relationship with foreign powers and other aspects; secondly, the majority of the countries are stable, but several countries such as Yemen, Syria, Iraq, Libya, and Somalia, are not, facing severe sectarian disputes and the threat of terrorism; thirdly, they are all in support of the Palestinian cause and are against the Israeli occupation of the Palestinian territories; fourthly, the Arab world is a converging point of Europe, Asia and Africa and is a transit of East-West trade routes, and most Arab countries have ports, stations, and crucial sea coastlines, although inter-Arab trade and investment are insignificant; fifthly, the Gulf countries (except Bahrain), Iraq, Libya, and Algeria have rich oil and gas resources, whose proven oil reserves account for 57.5% of the world total; sixthly, they are relatively poor in the Navigation Satellite and in other high-tech areas with the lack of capital investment and talents, but the market demand is huge, which provides an opportunity for Chinese enterprises to open the market. In recent years, companies such as Beijing LinkStar, Unicorecomm, Guoteng electronics, Hwa Create and Beidou Tianhui have launched positioning which is compatible with the US GPS, Russian GLONASS and the European Galileo; they provide their own chips for the China Navigation Satellite market (Ren, P., 2011: 56), and also provide an

important basis for China to open the Arab market.

Third, more than five years since “the Arab Revolts”, Arab countries have now refocused on domestic economic and social development, which has created conditions for the Beidou system to penetrate markets in the Arab world. Since the beginning of the 21st century, secular authoritarian Arab regimes have suffered from not only the consequences of the revolts but also challenges such as the US-proposed “Greater Middle East Initiative” and the rise of extremism. Affected by this, the Arab countries became the epicenter of unrest in the Middle East, in addition to Israel, Iran and Turkey—the three non-Arab countries. Arab countries have faced decomposition for a long time due to the West and Russian alliance politics: Algeria, Syria, Egypt and Iraq maintain traditional strategic cooperation with Russia; the GCC States, Turkey and Israel keep long-term security cooperation with the US. In 2013, the Arab League terminated the Syrian Bashar Assad government’s membership in the Arab League, further exacerbating the discord within the Arab world.

The Arab revolts did not bring democracy and freedom to the Middle East, but added more unrests, conflict and humanitarian crises. The Arab countries in transition and those facing unrest came to realize the importance of improving the livelihood of the people and development of economy, which created favorable conditions for the Beidou system to enter the Arab world. In recent years, Arab countries also showed great interest in the Beidou system. After June 2014, when President Xi proposed the Beidou Navigation Satellite system to land in Arab countries as soon as possible, the governments in the Arab world gave a positive response. For example, in October 2014, a delegation of 14 diplomats including Abdullah Al-Saadi, the head of Arab Diplomatic Corps in China and Omani Ambassador to China, Jordanian Ambassador Yahia Qarrally and other Arab representatives visited Qinhuangdao “Beidou Digital

Valley-Digital City” technology exhibition projects, and held preliminary discussions on the trajectory of Beidou system in the Arab countries.

Fourth, the nature of the relationship between foreign powers and the Arab world creates a condition for the Beidou system to land in the Arab world. Before the 2011 upheavals in the Middle East, the US GPS was widely used in the Middle East; it basically monopolized the Arab world especially in the market of Saudi Arabia, UAE, Qatar, Oman, Bahrain, Kuwait, Egypt, Morocco and other US allies. In the name of “providing free public goods”, the US occupied more than half of military and civilian Navigation Satellite market in the Arab countries. In addition, although the European Galileo system started late, it has showed a strong momentum of development in recent years.

The dependence of Western powers on the Middle East has declined, especially in the field of energy. The Obama administration pulled out major forces from Iraq and Afghanistan, and US global strategic focus shifted eastward to the Asia Pacific region. In response, the Arab states began to pursue a political and economic “looking east” policy (Andersen, L. & Jiang, Y., 2014: 31). On the one hand, they rely on the US and the European powers in national security; on the other hand, they depend on China, India, Japan and South Korea in economic and energy cooperation. The Arab countries’ anti-American and anti-Western sentiments are strong in the world, especially after the Israelis launched a military offensive in Gaza in 2014-2015, which led to thousands of Palestinian casualties. China was expected to be a political force and major investor to balance against Western influence, which provides yet another important opportunity for China’s Beidou system to enter the Arab world.

Fifth, under the new leadership of the Communist Party of China (CPC), “One Belt and One Road” Initiative creates conditions for the Beidou system to open the Arab market. Since

the 18<sup>th</sup> National Congress of the CPC, a central collective leadership has changed China's pattern of opening to the East, to Western powers and to Southeast in the past decades, and implemented the "Westward" strategy. President Xi proposed "One Belt and One Road" Initiative in 2013; the Chinese "Westward" strategy has become increasingly prominent; the promotion of Beidou System in the Arab world is an important part of the strategy to open to the West and realize "mutual connectivity and communication" proposed by the new administration; in January 2016, China announced its first Arab Policy Paper, expressing Beijing's strong desire to expand the bilateral and multilateral cooperation. During President Xi's visit to Saudi Arabia, Egypt and Iran, the host countries all expressed their willingness to become the pilot countries for the Beidou Navigation Satellite system to land in the Arab world. The strategic priority of China and the Arab world is expected to be moved from the edge to the center in each other's strategy.

## **II. Advantages of the Beidou System to Land in the Arab World**

The Arabs, like Persians and Turks and Jews, have brilliant ancient civilizations and it is their ambition to revitalize their national rejuvenation and advance in outer-space technology. Promotion of China's Beidou system in the Arab world has clear advantages. First, Navigation Satellite systems of world powers are forming a multipolar pattern; this creates a strategic advantage for the Beidou system to expand in the new market. At the beginning of twenty-first Century, the Middle East was in a state of multi-polarization. All major powers, including the US, Europe, Japan, Russia, India, and Brazil, were trying to expand their influence in the Arab world, but no one has been able to predominate. Major countries have attached great importance to

the upgrading and promotion of Navigation Satellite system technology, and have regarded the market share of their respective Navigation Satellite system in international market as the landmark of building a science and technology power. In March 2013, Japanese government announced the number of satellites in "Quasi-Zenith satellite system would be amplified from 3 to 4. The Japanese government cooperated with the Mitsubishi Electric and scheduled to complete the construction and launch of three satellites by the end of 2017 (Clark, S., 2013: April 4). In October 2014, India launched the third satellite in the "India regional navigation satellite system", named IRNSS-1C satellite. According to officials in New Delhi, by 2015, India had launched seven navigation satellites, and had thus become one of the world powers in Navigation Satellite technology (Hou, T., 2014: October 17). Russia accelerated its pace of promoting GLONASS. The US and the European Union have made use of their own technological advantages, trying to expand the gap between them and other powers in the field of Navigation Satellite. The internationalization and development of international Navigation Satellite system creates opportunities for the promotion of the Beidou system in the Arab world. In March 2016, China's first New-Generation Beidou Navigation satellite was successfully launched and sent to orbit by LM-3C rocket, indicating that China's Beidou Navigation System began to expand from a regional reach to a global reach (Tian, Z. & Chen, H.).

Second, China and Arab countries have similarities in historical experience, stage of development and national conditions, which constitute a political advantage for the Beidou system to enter the Arab world. After the establishment of the China-Arab States Cooperation Forum in 2004, the bilateral political exchanges have been increasingly frequent. In the promotion of political multi-polarization and diversification of civilization and many other aspects, China and the Arab countries

have reached considerable levels of consensus. The Arab world has anti-American sentiment partly due to the pro-Israeli US policy and on Iranian nuclear issue, while China seeks impartiality and nonalignment, which was appreciated by the Arabs. What's more, China and the Arab countries have common strategic objectives. The Western control of the Middle East is weak, providing a leeway for China to squeeze in.

China and Arab countries both belong to the Oriental civilization; they have similar views on the international order, democracy and human rights. For example, democracy cannot be exported, or imposed on by outsiders; democracy must be compatible with the value of the nation; it must be either socialist democracy with Chinese characteristics or Islamic democracy with Arab characteristics. In recent years, China and Arab countries have been jointly exploring the road to economic and social development for the developing countries. Arab States, especially those in the Gulf have put forward the Arab version of "Orientalism" in recent years, stressing the need to carry out positive diplomatic relations with East Asian countries, including China, Japan, South Korea, and India, and adhere to "equilibrium among great powers"-relying on the West in Security and depending on East Asia in economy. In the United Nations Security Council, China has always supported the Palestinian cause, which has won wide acclaim in the Arab world, creating a good political environment for the promotion of Beidou system in the Arab world (Sun, D. & Zoubir, Y., 2014: 87).

Third, the rapid development of economic and trade relations between the Arab countries and China in the new era has created an economic advantage for the Beidou system to open the Arab market. In recent years, China has replaced the US as the second largest trading partner of the Arab League, only second to the European Union. In 2013, the bilateral trade volume amounted to \$240 billion, of which the commodities that China imported from

the Arab countries amounted to \$140 billion (Xi, J., 2014: June 5). As of 2015, China was the largest trading partner of 10 Arab countries. China will encourage Chinese companies to import more non-oil products from Arab states, optimize the trade structure, and try to increase the bilateral trade volume from \$240 billion in 2013 to \$600 billion in 2023. China will also encourage Chinese enterprises to invest in energy, petrochemical, agriculture, manufacturing industry, service sector, etc. Besides, China will try to increase its non-financial investment stock to Arab countries from \$10 billion in 2013 to more than \$60 billion by 2023. The two sides have agreed on the establishment of the China-Arab Center for Technology Transfer, the construction of the training centers for Arab’s peaceful use of nuclear energy, and research on landing of the China’s Beidou Navigation Satellite system in the Arab states (Xi, J., 2014: June 5).

Fourth, the development of China’s Navigation Satellite technology creates a technical advantage for the Beidou system to open the Arab market. At present, in terms of Beidou system, China has completed one master control station, such as synchronous/injection stations, 17 monitoring stations for development and construction; the GPS modernization transformation work is steadily advancing in the US; the Russian GLONASS is stepping up the implementation of “recovery”; since the significant progress in compatibility with the GPS in L1 and L5 signal, European Galileo system planned to start operation in 2012; in terms of the construction of wide area and local navigation augmentation system, US, European Union, Russia and China have all made great headway in wide area augmentation system; Japan has also stepped up the pace of QZSS and MSAs construction; the construction of Indian IRNSS and GAGAN is also in progress (Zhu, X. & Li, X. & Yang, Y., 2011: 1). In the next decade, competition among the foreign powers in the Arab world will further intensify, which has brought opportunities for Beijing

to open the Middle East markets for the Beidou system.

Fifth, the aerospace bureau and other institutions established by the Arab world in the new period create advantages for the Beidou system to open the Arab market. China has already identified counterparts in its cooperation with the Arab countries in the field of Navigation Satellite. So far, Algeria, Egypt, Morocco and Tunisia have set up a National Aeronautics and Space Administration. In 2006, the UAE set up the United Arab Emirates high-tech research institute, and launched two satellites-- Dubai I and Dubai II, and planned to launch the independently developed satellite Dubai III in 2017; even the Bashar al Assad government of Syria, which was still at war, announced the establishment of Syria Aerospace Bureau in 2014 (Shaykhoun, S., 2014: August 26). Although Arab countries satellite communication technology started late, in recent years, they have shown greater development potential, laying a foundation for China's Beidou system to use remote sensing technology, identify counterparts, carry out targeted training, open the Arab market of agriculture, mapping, railway and sea transportation, container, etc. Technical trainings by China in Morocco's Space Technology Research Center, and cooperation with the United Arab Emirates Institute of advanced technology have both formed important bilateral cooperation relations.

According to data from the American Sky Net-Fixed Satellite Communications Company, in 2012 among the top 15 fixed network telecommunications satellites companies worldwide, two are from the Arab world, and they will become important partners of Chinese enterprises in the future.

### **III. Challenges to the Beidou System in the Arab World**

Promotion of the Beidou system in the Arab world is related to challenges at different levels, such as strategy and tactics,

military and civil, security and economic, bilateral and multilateral. They also hinge on system issues in various fields, such as relations between China and world powers, and relations between China and Arab countries. To sum up, the promotion of Beidou System in the Arab world is related to four challengers:

#### 1. Security Issues

Science and technology is an important part of a country's hard power. The Beidou system is one of China's 16 major projects, and is a token of China's centralized power to engage in key projects abroad. The promotion of the project in the Arab world is involved in considerations in security field. With the promotion of the Beidou system in the Arab world, the US, Russia, and the European Union are bound to be upset about China's implementation of "de-Americanization" and "de-Russianization" in the field of outer-space technology. For example," as pointed out regarding the *Space-based Positioning, Navigation and Timing Policy* introduced by American government in 2004, "no matter whether the spatial system and its enhanced system are designed for the capability of military use, positioning, navigation and timing signals --those inherent capabilities can be used by the enemies, including military forces and terrorists. The future application of GPS may be strengthened or weakened by the emerging foreign space-based positioning, navigation and timing service system... We must constantly improve our ability to reject and block the use of space-based positioning, navigation and timing services by our enemies, in particular, including the service that is easy to use and that may threaten the security of the US by the enemies and/or terrorists (US Space-Based Positioning, Navigation and Timing Policy, 2014: 40).

In recent years, the overseas promotion of the Beidou system and the establishment of the Beidou overseas station are facing the impact of local politics and turmoil. For example, the constitution and laws of some Arab states are opposed to any military presence

or establishment of a base station or a department of military forces by any foreign countries on their territory. If the Beidou system causes misunderstanding among the local Arab populations, or become the subject of distorted local and Western media's report, it will certainly have security consequences; it may even provide a pretext for extremists to attack Chinese infrastructure, contracting projects and kidnap overseas Chinese citizens in these countries, affecting overseas expansion of Beidou system in other countries. Therefore, to dispel the doubts of Western countries, Russia and the target countries, promotion of China's Beidou system should make use of not only the strengthening of top-level design from national security perspective, but also the distillation of Beidou system's government background and security factors at the operational level, that is, the de-politicization in the promotion process of Beidou system, stressing its corporate and commercial properties.

## 2.The Political Issues

In modern times, UK, France and other Western European countries had imposed colonial rule in the Middle East; during the Cold War period, the US and the former Soviet Union, respectively, established their own power orbits to strengthen geopolitical competition in the Middle East. China is different from the other four permanent members of the UN Security Council because it has never established a sphere of influence in the Middle East and never sought agents in the region. China has consistently supported the Arab countries' national independence and self-reliance. It has a better historical record than Europe, Russia and the US, which is conducive to the promotion of Beidou system in the Arab world at this stage. The Chinese government claimed that it upholds justice and supports the Palestinians to establish an independent state with East Jerusalem as the capital. It also maintains friendly relations and cooperation with all parties and seeks "zero-enemy" policy. If successful, the cooperation

between China and the Arab countries in the areas of overseas promotion of the Beidou system would become a model of the "South-South cooperation".

### 3. Interest Issues

The promotion of Beidou System in the Arab world needs to rationalize the relationship between government and enterprises, for its enterprises that will implement it and make profit from it. The Beidou Navigation System Office so far plays an active role in inter-agency coordination, based on the principle of "give it a hand and get it going", integrating all kinds of resources from the Ministry of Foreign Affairs, the Ministry of Commerce, National Development and Reform Commission, and other ministries, and treating the course as an important part of the overseas expansion of the overall Chinese interests: political and commercial. It not only needs to fully understand and prevent the judicial, social and cultural risk of the Beidou System's promotion in the Arab League, but also carry forward Chinese-styled "correct views on responsibility and benefit", put forward by President Xi; it must coordinate the domestic and international situations, taking into account the short-term commercial interests and long-term strategic interests. Overseas interests are often the redistribution of overseas interests of Chinese enterprises. In the promotion process, the government should play a leading role, such as timely releasing investment risk reports on the Middle East to avoid "rash investment and rash withdrawal" of Chinese-funded enterprises in the Arab world, and eliminate the negative factors of Chinese enterprises' internal intense competition in the Arab countries as far as possible.

### 4. Technical Issues

The Arab countries have different political systems, levels of economic development and social governance, and their demands for the Beidou system vary. Since the outbreak of the Arab revolts, most Arab countries have been in fiscal crisis, and their high-tech

talents are flowing to Europe and the US. The Arab countries are relatively backward in outer space technology, making it hard for China to negotiate with its counterparts. So far, only Egypt, Morocco, Algeria and a few other countries have established Bureaus of Aeronautics and Astronautics. The Arab Satellite Communications Organization, which was founded in 1976, and headquartered in the Saudi capital Riyadh is one of the Arab world's most important satellite communications organizations. The Arab countries, except the Comoros, boast some of the organization's shares, among which Saudi Arabia is the largest shareholder, owning 36.7% of the shares, and Kuwait 14.6%, Libya 11.3%, Qatar 9.8%, and the UAE 4.7% (Arabsat.com). Although the Arab Satellite Communications Organization has a certain influence in the Middle East, compared with the world powers, such as US, Europe, Russia, and China, 22 Arab countries are still poor in the Navigation Satellite technology.

In order to promote high-tech innovation within the Arab world, and to make the Arab states important and unique players in the global navigation satellite system, in 2008, the UAE government put forward an initiative, calling for the establishment of a unified Pan-Arab Space Agency within the Arab League framework, trying to maximize the league's collective advantage, especially the financial advantage of the six GCC countries to join hands and reduce costs, with a view to promoting the development of Arab aerospace industry. The main task of the Pan-Arab Space Agency aims to help the Arab countries to combat terrorism, and promote the development of shipping, policing, pollution prevention and environmental protection and other undertakings. According to the major Arab states, in the future, the Pan-Arab Space Agency will seek civil use as priority like the European Space Agency, rather than the militarization path that the US National Aeronautics and Space Administration (NASA) follows (Shaykhoun, S., 2014: August 26).

Although the promotion of the Beidou system in the Arab world has the above-mentioned advantages, it is also facing various challenges. There are four major contradictions in the Middle East: the first is terrorism and antiterrorism; the second is pro-Western versus anti-Western camps; the third is GCC countries against Iran; the fourth are the Arab countries vis-à-vis outside powers. These contradictions are intertwined, and together constitute the main hot issues in the Middle East, such as the conflict between Palestine and Israel or the conflict between Sunni and Shiite sects. Affected by these, in the new era, the promotion of Beidou System in the Arab world mainly faces four types of risks:

The first is political, including the impact of the political changes in the Arab world hard politics, electoral politics and turmoil. The representatives are Libya, Tunisia, Egypt and Yemen. In the four countries, the original authoritarian regimes have been toppled, but the new power structure has yet to be established, which resulted in secular and religious power divisions. Thereafter, it has become the main characteristics of the national political nature for these political transformation countries. After the outbreak of the war in Libya in 2011, China launched the largest evacuation of its overseas compatriots with direct loss of \$20 billion; at the end of March 2015, Saudi Arabia announced it had launched military operations in Yemen, carrying out air strikes in coordination with a 10-country coalition seeking to beat back Houthi militia forces besieging the southern city of Aden where the country’s president had taken refuge (*Telegraph*, 2016: March 26). China again initiated evacuation of expatriates in Yemen.

The second category relates to security risks, including terrorism and religious extremism in these countries. Such risks are typical in Iraq, Syria, Somalia, Algeria, Egypt and Yemen. The unrest in the Middle East provides fertile soil for the rise of

terrorism and extremism. Since modern times, international terrorism has gone through four waves, that is, anarchic terrorism (from the 18th century to the 19th century), anticolonial terrorism (the first half of 20th century), ideological terrorism (1950-1990) and religious terrorism (1991-2011) (Zhang, J., 2007: 62). The rise of the "Islamic State" portends the emergence of the fifth wave of terrorism. It is a microcosm of a new round of the wave of terrorism in the Middle East. It develops along with the Al-Nusra Front in Syria, the Al Qaeda in Yemen, Al Quds in Sinai Peninsula, the Al-Qaeda in the Maghreb, the al-Shabaab in Somalia and other terrorist groups in the Middle East. They exploit the chaos in the region to expand their regional influence, resulting in a new round of chaos in the Middle East.

Since 2013, the rise of Somali al-Shabaab, the "Islamic State" and the Syrian "Al-Nusra Front" have not only posed a direct threat to the situation in the region, but also posed an indirect threat to China's energy and investment projects in the Arab countries (Gulmohamad, Z., 2014: 2). For example, Iraq is currently China's second largest oil importer, next to Saudi Arabia. The "Islamic State" has posed a real threat to China's oil investment and overseas nationals.

The third is the judicial risk, including laws and regulations restraining the investment of the Beidou system. For example, the Yemeni government had attempted to set up a National Aeronautics and Space Administration, but due to the religious decree of Fatwas issued by the countries' religious forces, which prohibited the government to fund the exploration of the universe, Yemen had to give up the plan (Shaykhoun, S., 2014: August 26). In addition, after the end of the colonial rule, Britain and France "left" their judicial system in the Arab world, which tended to have a more explicit limit on the overseas investment projects involving national sovereignty, the national economy and the people's livelihood. This also presents a serious challenge to the

Beidou system.

The fourth concerns cultural risks, including the impact of nationalism in the Arab world and Islamic values on the promotion of the Beidou system. Despite differences in national conditions, political institutions and economic development in the Arab world, the Arab countries are all proud of their own glorious civilization, and ambition to revive Arab and Islamic civilization. Therefore, many Arab States’ policies towards external powers have two sides: on the one hand, they hope to rely on the security umbrella provided by Western powers to protect the states and regimes; on the other hand, these countries are vigilant about growing military presence and economic existence of the foreign powers. When overseas investment projects involve national security and domestic politics, the media, oppositionists, and religious extremist forces will probably politicize the overseas investment projects. Some social problems related to China’s investment projects in the host countries will be magnified. Beidou system in the region is in no exception.

The above analysis focused on political, security, judicial and cultural risks concerning Beidou system’s promotion in the Arab world. However, the above four categories of risk in Arab countries do not necessarily pose a direct threat to China’s Beidou system in the Arab countries: some are immediate while others are potential.

Table 1: Types of Security Threats in the Arab World

Arab countries	Political Risks	Security Risks	Judicial Risks	Social and Cultural Risks	Level of Demand for the Beidou System	Priority for Beidou System to Land the Country
<b>8 Gulf countries</b>						
Iraq	High	High	High	Medium	Medium	×
Saudi Arabia	Low	Low	Low	Medium	High	√
Kuwait	Low	Medium	Medium	Medium	Medium	√
Oman	Low	Low	Low	Low	Medium	√
UAE	Low	Low	Low	Low	High	√
Qatar	Low	Low	Low	Low	High	√
Bahrain	Medium	Low	Low	Low	Medium	√
Yemen	Medium	High	High	Medium	Low	×
<b>5 Eastern Mediterranean Countries</b>						
Lebanon	High	High	Low	High	Low	×
Syria	High	High	High	Medium	Low	×
Palestine	High	High	Medium	High	Low	×
Jordan	Low	Medium	Medium	Medium	Medium	√
Egypt	Medium	Medium	Medium	Low	High	√
<b>4 East African Countries</b>						
Somalia	High	High	High	High	Low	×
Sudan	high	high	Medium	Medium	High	×

Djibouti	Medium	Low	Low	Low	Low	×
Comoros	Low	Low	Medium	Low	Low	×
<b>5 Northwestern African Countries</b>						
Tunisia	Low	Low	Low	Low	Medium	√
Morocco	Low	Low	Low	Low	High	√
Libya	High	High	High	Medium	Medium	×
Algeria	Medium	Medium	Low	Low	High	√
Mauritania	Medium	Medium	Medium	Low	Low	×

#### IV. Conclusion

At present, administrative laws and regulations related to China’s Beidou navigation system landing in the Arab countries have been released, such as the “Mid and Long-term Development Plan for National Navigation Satellite Industry”, a Chinese white paper released in 2013; “Opinions on the Promotion and Application of Beidou Navigation Satellite System” was released by the State Bureau of Surveying and Mapping Geographic Information in March 2014, but the top-level design of the internationalization of the Beidou system is still lacking. The promotion of Beidou System in the Arab world needs to be based on the existing planning, follow a gradual and steady way, and facilitate the landing of the Beidou system in the Arab world incrementally.

First, the China-Arab States Cooperation Forum should be a platform to deepen Sino-Arab outer-space cooperation. In the promotion of Beidou system in the Arab world, China should incorporate the Beidou system into the dual frameworks of

multilateral mechanisms of China-Arab States Cooperation Forum and bilateral strategic cooperative relations between China and the respective Arab countries, making it a part of China's technical assistance. China has already established a task-oriented "sub-forum" on Satellite Navigation, and possibly form a "working group" in the multilateral arena of the China-Arab Cooperation Forum. Efforts will be made to establish training and education centers in the Arab countries for Navigation Satellite system to pave the way for Beidou system.

Second, efforts should be made to enrich the content of the Beidou System in the Arab world and implement China's scientific and technological diplomacy in the new era. The Beidou system is an important achievement of China's space infrastructure; it is of great significance to promote the implementation of the "going out" strategy, and to speed up the construction of a surveying and mapping power. China will treat the Beidou system as an important part of its technological assistance to the Arab counterparts, and offer it as "public goods" to the Arab world. In the fields of management, public security, police, fishery, hydrology, shipping, transportation, agriculture, forestry, water conservancy, meteorological, land resources, environmental protection, disaster prevention and mitigation, and emergency search and rescue, Beidou system can play a positive role by providing quality service to the Arab people (State Bureau of Surveying and Mapping Geographic Information, 2014: March 6).

The ultimate goal of the development of space industry is for civil purpose, and Beidou system is a case in point. After the development of China's Beidou system, it is necessary to consider how to further apply it to the whole economic construction. This will undoubtedly provide a development opportunity for Beidou system, so China needs to improve the quality of products, manage the space tube in the transport control system, and serve the users well (Sun, J., 2012: 24), making it an important

infrastructure in Arab countries. 1. Continue to strengthen the China-Arab States Cooperation Forum in political cooperation, making it a regional organization instead of a loose forum; 2. Establish a stable relationship in energy cooperation and carry out mutually beneficial economic and trade cooperation; 3. China and the Arab countries should politically support each other; for instance, China could actively safeguard the legitimate rights of the Arab countries at the United Nations, Asian Infrastructure Investment Bank, Silk Road Fund, G20 and the International Monetary Fund; in return, Arab states would actively support China's territorial integrity, protect Chinese interests in the Middle East and in the world arena; 4. Strengthen military exchanges, including China's training of Arab military officers (Sun, D., 2014: 4-6); 5. Strengthen high-level visits, and increase the scale of people-to-people and youth exchanges; 6. Standardize bilateral strategic cooperative relations systematically, and establish dialogue and cooperation in an all-round way. Department of West Asia and North Africa Affairs, the Ministry of Foreign Affairs should establish closer cooperation with related agencies of the Beidou system to jointly promote the Beidou system's landing in the Middle East countries.

Third, strengthen people-to-people exchanges between China and the Arab countries to create a favorable atmosphere for the promotion of Beidou system in the Arab world. China and Arab countries decided to set 2014 and 2015 as the Years of China-Arab Friendship and had organized a series of events for people-to-people diplomacy. China is also willing to expand the scale of cultural exchanges with the Arab countries, such as the Art Festival, encourage more young students to visit each other for academic activities, strengthen cooperation in areas like tourism, aviation, press and publication etc. In the next three years, China will train 6,000 talents of all kinds for Arab countries. In the next 10 years, China will organize exchange visits for 10,000 Chinese

and Arab artists, promote and support 200 Chinese and Arab cultural institutions to carry out cooperation, and invite and support 500 Arab cultural and artistic talents to receive training in China. China is considering the establishment of a publicity, training and demonstration center for Beidou system in the framework of the Confucius Institutes in the Arab countries. The center may conduct surveys and field work in the host countries, and pave the way for the promotion of the Beidou system in the Arab world.

Fourth, strengthen China's agenda-setting capability in the international organizations related to the Beidou system, and obtain more international certifications. China should attach great importance to the Global Navigation Satellite System (GNSS), the International Maritime Organization (IMO), the International Electro-technical Commission (IEC/TC80), International Telecommunication Union (ITU), the International Association of Lighthouse Authorities (IALA), Radio Technical Commission for Maritime Services (RTCM) and so on (Zhou, Y. & Kang, D., 2014: 70). In November 2014, the 94th meeting of IMO Maritime Safety Committee was held in London. The session examined and recognized the Beidou system navigation—it passed the Navigation Security Letter for Beidou system. This is the third Navigation Satellite system that the IMO had approved, following GPS and GLONASS. Beidou system standards obtained international certification for the first time, indicating that the Beidou system has officially become a component of the global radio navigation system and would foster the international judicial status for its maritime applications. In the next decade, the global navigation satellite system will evolve from the monopoly of the US to multi-polarity, including the US, Europe, Russia, China, India, and Japan, which will provide a strategic opportunity for the Beidou system to expand to the Arab market.

Fifth, identify the pivotal countries to promote the Beidou

system overseas. Arab countries are facing different types and degrees of political, security, judicial and social risk, which must be taken into consideration in the application of the Beidou system in the Arab world. This determines that in the new era, China needs to identify pivotal countries in the region to promote the Beidou system project, and select key areas and pilot projects. Saudi Arabia and the UAE in West Asia, together with Egypt, Morocco and Algeria in North Africa, should serve as the priority for the Beidou system to establish its business. These countries have huge demand for the Beidou system. Saudi Arabia and the UAE in West Asia, and Egypt, Morocco and Algeria in North Africa, are the key countries that have a strong influence in the region. They have relatively large populations or sizable economic outputs, and the industry demand for the Beidou system is strong as well. Saudi Arabia, the UAE, Egypt, Morocco and Algeria have been in relatively stable political situation since 2014; they have external conditions for the promotion of Beidou system. Again, these countries have closer political ties with China. The five countries have similar national conditions with China—they all treat economic and social development as the priority of national construction; they are attached to long-term friendly policy toward China, and adhere to “Look East” strategy. Saudi Minister of Defense and Crown Prince Salman and Egyptian President Al-Sisi visited China and were both received by President Xi. In 2014, Yu Zhengsheng, Chairman of the Chinese People’s Political Consultative Conference (CPPCC), visited Morocco and Algeria; in January 2016, President Xi successfully visited Saudi Arabia, Egypt and Iran, and signed MOUs on satellite navigation cooperation with Saudi Arabia and the Arab League. President Xi and Egyptian President Al-Sisi jointly visited the Beidou Session of China’s high-tech exhibition (Ni, S., 2016: February 2). China has established comprehensive strategic partnerships with Saudi Arabia, Egypt, and Algeria and a strategic partnership with

Morocco, and has attached great importance to relations with these countries for a long time. As of 2016, China's government agencies have established preliminary contacts and cooperation with their counterparts in Saudi Arabia, Egypt, Morocco, Algeria, and the UAE, the parties are exploring ways of joint research, technological development and market promotion. In the foreseeable future, the Beidou system may serve as an "outer space Silk Road" connecting the Chinese and Arab peoples in the new era.

## References

- Andersen, L. & Jiang, Y. (2014). *Oil, Security and Politics: Is China Challenging the US in the Persian Gulf?* Copenhagen: Danish Institute for International Studies.
- Arab Satellite Communications Organization, Retrieved May 1, 2016 from <http://www.arabsat.com/pages/history.aspxhidalogo>.
- Clark, S. (2013: April 4). *Japan to Build Fleet of Navigation Satellites*, Retrieved May 1, 2016 from <http://www.spaceflightnow.com/news/n1304/04qzss/#.V5Np-vmECDA>.
- Gulmohamad, Z. (2014). The rise and fall of the Islamic State of Iraq and Al-Sham (Levant) ISIS, *Global Security Studies*, Issue 2.
- Hou, T. (2014: October 17). India: successfully launched navigation satellite, its regional navigation system is completing, *Global Times*.
- Ni, S. (2016: February 2). The five satellites are pushing Beidou Navigation System to the World, *China Science Daily*.
- Ren, P. (2011). Beidou Navigation Satellite system as an escort carrier for national security, *Aerospace China*, No.4.
- Saudi Arabia carries out air strikes in Yemen (2006: March 26). *The Telegraph*.
- Shaykhoun, S. (2014: August 26). *Pan-Arab Space Agency: Pipe Dream or Real Possibility?* Retrieved May 1, 2014 from <http://www.satellitetoday.com/publications/2014/08/26/pan-arab-space-agency-pipe-dream-or-real-possibility/>.

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- Sun, D. & Zoubir, Y. (2014: September). China-Arab states strategic partnership: myth or reality? *Journal of Middle Eastern and Islamic Studies (in Asia)*, No.3.
- Sun, D. (2014: August). China's Soft Military Presence in the Middle East, *World Economics and Politics*, No.8.
- Sun, J. (2012). To accelerate the development of the Beidou Navigation Satellite system industry, *China Venture Capital*, No.23.
- The State Bureau of Surveying and Mapping Geographic Information: Opinions on the promotion and application of Beidou Navigation Satellite system* (2014: March 6). Retrieved May 1, 2016 from <http://www.beidou.gov.cn/2014/03/12/201403127f514d5e5ea243a2b6544332ac4328c1.html>.
- Tian, Z. & Chen, H. *China successfully launched the first New-Generation Beidou Navigation Satellite*, Retrieved May 1, 2015 from <http://www.beidou.gov.cn/2015/04/01/20150401b4b91ddc213a45129a665ea3272b5aed.html>.
- US Space-Based Positioning, Navigation and Timing Policy(2014). *Navigation Satellite Information*, No.1.
- Xi, J. (2014: June 5). To carry forward the spirit of the Silk Road and deepen cooperation between China and the Arab States–Speech at the opening ceremony of the sixth ministerial conference of the China-Arab State Cooperation Forum, *People's Daily*.
- Zhang, J. (2007: December). The four waves of modern terrorism, *International Survey*, No.6.
- Zhou, Y. & Kang, D. (2014). Early exploration of standardization work of Beidou Sytem in the international maritime organizations, *China's Standardization*, No.1.
- Zhu, X. & Li, X. & Yang, Y. (2011). To accelerate the construction of China's Beidou Navigation Satellite system based on the development of international Navigation Satellite system, *Bulletin of Surveying and Mapping*, No.8.