

MUST- IPRA Corporation **Khartep Ltd., Kharkov, Ukraine**

**The experience which has been got
in Aker Solutions, Norway**



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Khartep Ltd., Kharkov, Ukraine

Brief info about Khartep Ltd. activities:

Process control systems design “under key”:

- Dispatching automated control systems;
- Automated metering systems of energy, different gas, steam and compressed air, hydrocarbon oils, water, pulp, heat;
- Billing systems – settlements with private and industrial consumers;
- Process control systems for various industrial fields and applications;
- Telemechanic systems for electrical substations;
- Satellite navigation, landing and localization systems;
- GIS-systems;
- Local and corporate networks.

Production activities:

- Production of automation equipment for energy supply facilities (RTU, communication module, channel adapter).
- Design works and supply of dispatcher panels and video walls.

B2B activity:

- Outsourcing and Outstaffing;
- Engineering hub creation for various applications and directions.



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Khartep partners:



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Ovation certificates of Khartep specialists after learning by Emerson



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The main idea: why contracting Must-Ipra

- ✓ *In 2006 Aker Solutions corp. challenged Aker Elektro to secure resources, capacities and competence within EIT to meet the increasing demand in a growing market, both in Norway and especially internationally.*
- ✓ *Aker Solutions is building up capacity in Russia and Caspian.*
- ✓ *The contract with Must Ipra is a part of a long term strategy to meet these challenges.*
- ✓ *A contributor for AEL in order to have access to EIT resources in a tight labour market*

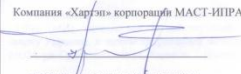



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In 2007 the memorandum between Khartep Ltd. (Ukraine) and Aker Solutions (Norway) was signed.

МЕМОРАНДУМ О ВЗАИМОПОНИМАНИИ по проекту сотрудничества в нефтегазовой отрасли	MEMORANDUM OF UNDERSTANDING FOR Oil & Gas co-operation project
Данный меморандум о взаимопонимании (MoU) заключен и вступает в силу 27 ноября 2007 года.	THIS MEMORANDUM OF UNDERSTANDING (MOU) is made and came into force the 27 th of November 2007.
между	BY AND BETWEEN
Компанией «Хартэп» корпорации МАСТ-ИПРА (МИ), основанной и действующей по закону Украины, и зарегистрированной по адресу 61024, ул. Гуданова, д. 9/11, Харьков, Украина.	Khartep Company of Must-Ipra Corporation (MI), organised and acting under the law of Ukraine, and having its registered address at Gudanova St., 9/11, 61024, Kharkov, Ukraine.
и	AND
Компанией Aker Kvaerner Electro AS, (AKEL) основанной и действующей по закону Норвегии, и зарегистрированной по адресу Badelungst 39, N-4300 Stavanger, Norway, (здесь и далее именуемые отдельно Сторона, а вместе Стороны).	Aker Kvaerner Elektro AS, (AKEL) organised and acting under the law of Norway, and having its registered address at Badelungst 39, N-4300 Stavanger, Norway, (Hereinafter referred either in singular or plural as either Party or Parties).
1. ОБЩИЕ ПОЛОЖЕНИЯ	1. GENERAL CONDITIONS
Поскольку Стороны в виду своих многочисленных возможностей определили, что получат пользу от заключения соглашения между своими соответствующими организациями с целью развития наилучшим образом проект сотрудничества в нефтегазовой отрасли (здесь и далее по тексту именуемый как "Проект").	WHEREAS, the Parties, because of their diverse capabilities, have determined that they would benefit from a contract arrangement between their respective organisations, in order to develop the best Oil & Gas co-operation project (hereinafter called the "Project").
Таким образом, в соответствии с вышеизложенным и принимая во внимание взаимные указанные ниже совместные обещания, корпорация МИ и компания AKEL, настоящим договариваются о:	NOW, THEREFORE, in accordance with the foregoing premises and in consideration of the mutual promises hereinafter contained, MI and AKEL hereby agree as follows:
1.0 Стороны соглашаются войти в добросовестные переговоры относительно сроков и условий возможного контрастного соглашения (здесь и далее именуемого как «Соглашение») на основе совместно оговоренных сроков и условий, направленных на дальнейшее установление контрактных отношений между Сторонами. Каждая Сторона будет предоставлять ресурсы и ставить соответствующие задачи, направленные на выполнение «Проекта» Сторонами.	1.0 The Parties agree to enter into good faith negotiations with respect to the terms and conditions of an eventual contract agreement (hereinafter referred to as the "Agreement"), on the basis of mutual back to back terms and conditions and with respect to setting forth the contractual relationship between the Parties. Each Party will provide the resources and establish the respective tasks to undertake for the performance of the "Project" by the Parties.
В соглашении, среди прочего, будут изложены дальнейшие детали участия каждой	The Agreement will also set forth, among other things, the details of each Party's

позднее 31 декабря 2007г.	16.0. Furthermore, if non-compliance between the english and russian text, the english version shall be ruling.
16.0. В дальнейшем, в случае расхождения английского и русского текстами, преимущество имеет английская версия.	
В подтверждение вышесказанного, Стороны подписывают данный «Меморандум о взаимопонимании» от дня, месяца и года, указанных в начале.	IN WITNESS WHEREOF, the Parties hereto have executed this Memorandum of Understanding as of the day, month and year first above written.
Компания «Хартэп» корпорации МАСТ-ИПРА	AKER KVAERNER ELEKTRO AS
	
ФИО: Титов Н.Н. / Nikkai TITOV	NAME: Tore Engvik
Должность: Генеральный директор / General Director	TITLE: President
Город и дата: Ставангер, 27.11.2007	Place & Date: Stavanger, 27.11.2007

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The specialists of Khartep Ltd. have gone through e-learning courses on Aker's Internet portal very successfully. There were such courses:

- Advanced Training for Microsoft Office 2003 Collection;
- People Survey Introduction course;
- Stress Management;
- Protect – Basic information security;
- Aker Kvaerner Induction Program;
- Project Execution Model (PEM);
- Just Care;
- HSE Risk Assessment;
- Vaer sikker - Keep Safe.



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CERTIFICATE

Name: Yuri Yephimov
Company: Aker Solutions
Organisational unit: Aker Kværner Elektro

This confirms that the above named has completed the following online courses:

Date	Score	Course	Vendor
2007-12-10	100	... Vær sikker - Keep Safe!	Mintra
2008-01-16	70	Aker Kvaerner Induction Programme	Aker Solutions
2007-12-03	80	HSE Risk Assessment	Aker Solutions
2008-01-12	80	Introduction to Recruitment in Aker Solutions	Aker Solutions
2007-12-05	90	Just Care	Aker Solutions
2007-12-12	70	PEM eLearning course 2 - Using PEM in projects	Aker Solutions
2008-01-12	-	People Survey Introduction course	Aker Solutions
2007-12-11	80	Protect - Basic information security	Aker Solutions
2007-12-10	90	Stress Management	Aker Solutions



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In 2008 the first contract between Khartep Ltd. (Ukraine) and Aker Solutions (Norway) was signed.

<p>CONTRACT № 5/05-2/08 Kharkov, Ukraine, 05.05.2008</p> <p>Aker Elektro AS, (AEL) organised and existing under the laws of Norway, hereinafter referred to as "CUSTOMER", represented by President Tore Engevik, on the one side, and Khartep Ltd, organised and existing under the laws of Ukraine, hereinafter referred to as "CONTRACTOR", represented by General director Nikolay N. Titov, who acts under the Charter, on the other side, together referred to as "PARTIES" and individually as "PARTY", have concluded this CONTRACT on the following basis:</p> <p>1. SUBJECT OF THE CONTRACT</p> <p>1.1. CONTRACTOR undertakes to perform works on objects analysis, design, start up, adjustment, field engineering and competence services of the oil platforms equipment to Aker Elektro AS in Norway in the projects "Kashagan Field Eng", "H6 Field Eng", "Skarv Field Eng" and "Gjoa Field Eng"; CUSTOMER undertakes to accept performed work and pay for them.</p> <p>1.2. The works under this CONTRACT will be performed in Norway, by up to 12 engineers based on this CONTRACT's scope of work.</p> <p>1.3. Term of performance: May 14th – October 19th 2008.</p> <p>1.4. CONTRACTOR shall be responsible that CONTRACTOR'S PERSONNEL have the required certificates and qualifications to perform the work in a professional and skilled manner in accordance with the requirements of the CUSTOMER including applicable rules and regulations of law.</p> <p>1.5. CONTRACTOR shall not remove, change, take away or replace CONTRACTOR'S PERSONNEL without written prior approval from the CUSTOMER.</p> <p>1.6. CONTRACTOR'S PERSONNEL shall at CUSTOMER'S request sign a certificate of confidentiality and conflict of interest.</p>	<p>КОНТРАКТ № 5/05-2/08 Харьков, Украина, 05.05.2008</p> <p>Компания Aker Elektro AS, (AEL), являющаяся юридическим лицом по законодательству Норвегии, далее по тексту – «ЗАКАЗЧИК», в лице Президента г-на Tore Engevik, с одной стороны, и ООО «Хартеп», являющееся юридическим лицом по законодательству Украины, далее по тексту – «ПОДРЯДЧИК», в лице Генерального директора г-на Титова Николая Николаевича, действующего на основании Устава, с другой стороны, при совместном упоминании – «СТОРОНЫ», а раздельном – «СТОРОНА», заключили настоящий КОНТРАКТ о нижеследующем:</p> <p>1. ПРЕДМЕТ КОНТРАКТА</p> <p>1.1. ПОДРЯДЧИК обязуется выполнить в интересах компании Aker Elektro AS, Норвегия, работы по обследованию объектов, проектированию, пуско-наладке, шефмонтажу и сдаче в эксплуатацию оборудования для нефтяных платформ в рамках проектов "Kashagan Field Eng", "H6 Field Eng", "Skarv Field Eng" и "Gjoa Field Eng"; а ЗАКАЗЧИК обязуется принять и оплатить указанные работы.</p> <p>1.2. Работы по настоящему КОНТРАКТУ будут выполняться на территории Норвегии, группой в составе до 12 специалистов, основываясь на объемах работ, предусмотренных настоящим КОНТРАКТОМ.</p> <p>1.3. Срок выполнения работ: с «14» мая 2008 года по 19 октября 2008 года.</p> <p>1.4. ПОДРЯДЧИК несет ответственность за наличие у своего персонала образования и квалификации, необходимых для умелого и профессионального выполнения работ в соответствии с требованиями ЗАКАЗЧИКА, включая требования подлежащих применению правил и нормативных актов.</p> <p>1.5. ПОДРЯДЧИК не вправе отзывать, изменять либо заменять состав своего персонала без получения предварительного письменного согласия ЗАКАЗЧИКА.</p> <p>1.6. Персонал ПОДРЯДЧИКА обязан по требованию ЗАКАЗЧИКА подписывать соглашение о конфиденциальности и конфликте интересов.</p>
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<p>ON BEHALF OF THE CUSTOMER ОТ ИМЕНИ ЗАКАЗЧИКА</p> <p>Aker Elektro AS (AEL)</p> <p>Tore Engevik</p> <p>NAME/ИМЯ: Tore Engevik</p> <p>TITLE/ДОЛЖНОСТЬ: President</p>	<p>ON BEHALF OF THE CONTRACTOR ОТ ИМЕНИ ПОДРЯДЧИКА</p> <p>Khartep Ltd</p> <p>Nikolay N. Titov</p> <p>«Хартеп»</p> <p>NAME/ИМЯ: Nikolay N. Titov</p> <p>TITLE/ДОЛЖНОСТЬ: General director</p>
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Почтовый адрес: Украина, 61 072,
г. Харьков, ул. Тобольская – 42, офис 204

Валютный счет: 26007036331400
Intermediary: DEUTDEFF
Deutsche Bank AG, Frankfurt
Account with Institution:
KHABUA2K/947000610
UKRSIBBANK KHARKIV, UA
Account number: 26007036331400
Beneficiary customer:
Khartep Ltd, KHARKIV, UKRAINE
E-mail: office@khartep.com.ua



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The specialists of Khartep Ltd. have also gone through learning program during one month in Stavanger very successfully. The learning program included such courses:

- Introduction to Process Systems with certificate;
- System Control Diagram course;
- Working in Project;
- ProjectWise Course;
- Introduction to TIME;
- Ex \ Exi Basic with certificate;
- P&ID Course for Instrument Engineers;
- Introduction to the laws and regulations for the Norwegian continental shelf (ISO, IEC, NORSOK, PSA).



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In office of Aker Solutions in
Stavanger



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On excursion in Oil and
Gas Museum in Stavanger



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Ex \ Exi Basic course
in Park inn hotel in
Stavanger



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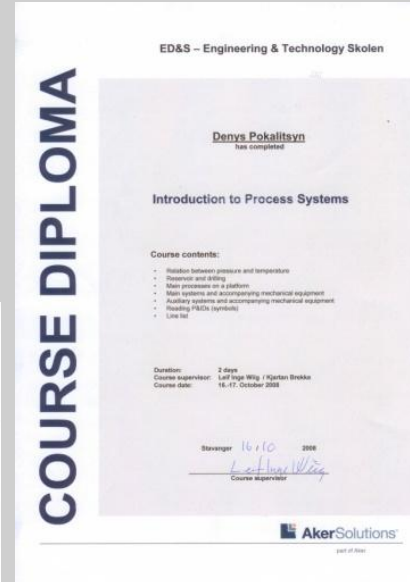
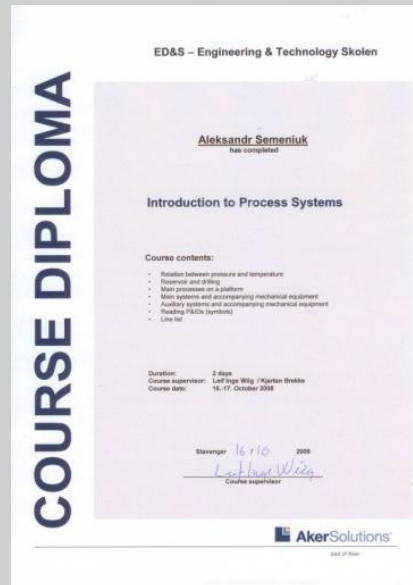
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On site in Stord

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The specialists of Khartep were working in engineering centers of Aker Solutions which are located in Stavanger, Bergen, Stord.

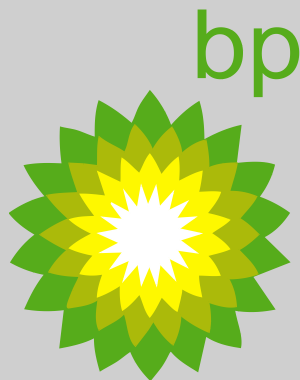


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After leaning and approval by Aker customers the specialists of Khartep started on real projects for such customers as:

1. BP
2. STATOIL
3. SHELL
4. ConocoPhillips



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The specialists of Khartep mainly worked on real projects such as:

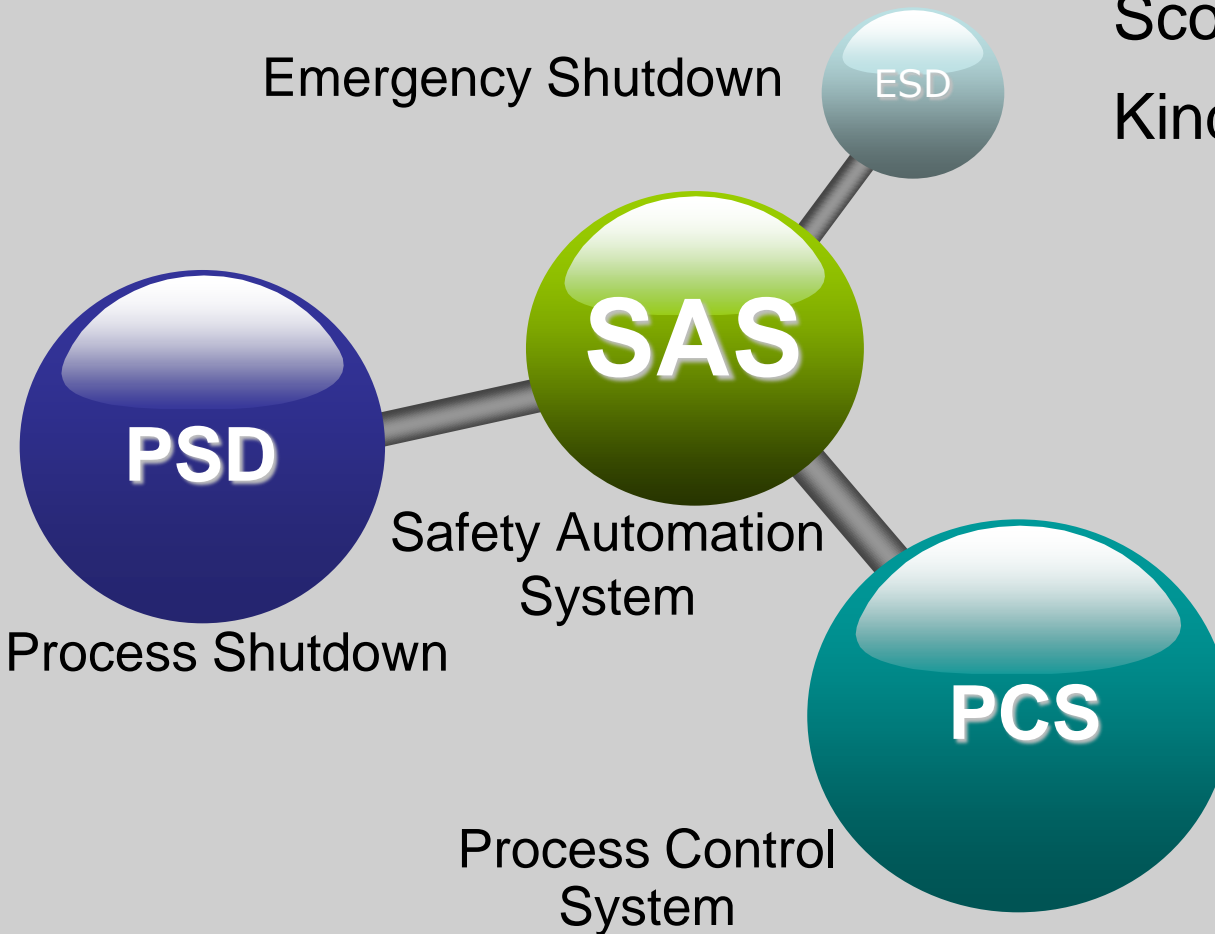
1. For BP customer:
BP V & M project;
Vallhall DP-HPU-WPC-Replacement project;
2. For STATOIL customer:
Statfjord Late Life project, including Statfjord B and Statfjord C platforms;
Troll C Low Pressure Production modification project;
Tampen project (maintenance & modification);
Alve tie-in Norne mobilised in a modification project;
3. For SHELL customer:
Shell NISK Ormen Lange Test Pit project.



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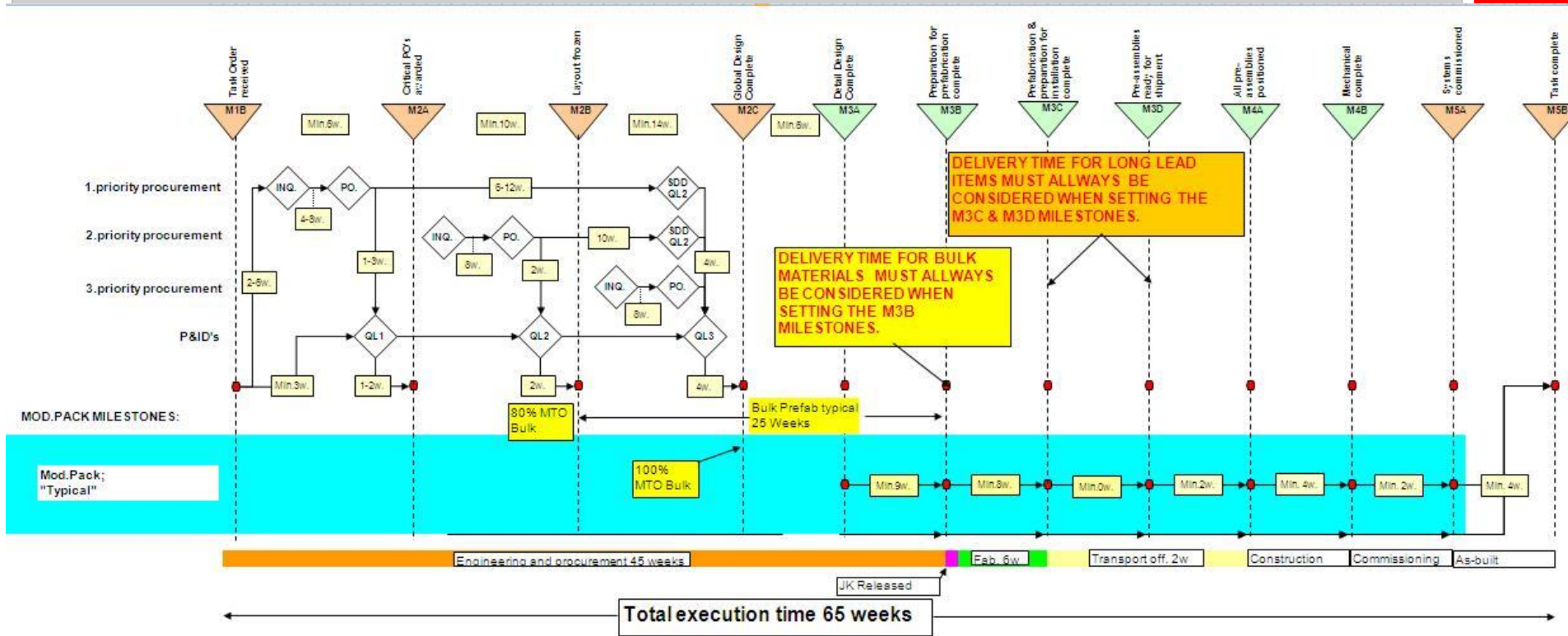
Scope of work:
Kinds of systems



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Project implementation following PEM (Project Execution Model)



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Kinds of tasks (1):

- Telecom – concept development/verification;
- Instrument – concept development/verification;
- Instrument – quantity /cost estimation and plan input;
- Instrument – register: QL1, QL2, QL3 & QL4;
- Check documentation for electrical work packages, modification datasheet “AS Built Statuslist” using MIPS 2007;
- Layout and hook-up drawings;
- Loop & termination drawings;
- Engineering new sequence logic and SCD for MPP;
- AS-BUILT & LCI documentation;
- Shopeng electrical., MTO and site engine;
- Check job cards for instrumental work packages using MIPS 2007;
- Analysis & calculations requirement PHA;
- Instrument, Cost estimate for Execution of O.L. Subsea Compression test site;



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Kinds of tasks (2):

➤ **Planning**

Estimating, scheduling, detailed project planning and cost budgeting, expenditure monitoring and resource planning.

➤ **Basis of Design**

This document contains base requirements, technical definitions, preliminary drawings, equipment lists, etc. and identifies how the conceptual design will provide the performance and operational requirements of the control system.

➤ **SCD (System Control Diagrams)**

Control algorithms are represented by system control diagrams (SCD). SCD are being developed according to customer requirements, appropriate standards and other normative documents, i.e. NORSOK I-005, Rev. 2.

➤ **Safety Systems Hierarchies**

PSD (Process Shutdown) and ESD (Emergency Shutdown) These documents represent possible shutdowns as a cascading hierarchy of levels with the higher (ESD) levels that trip lower (PSD) levels. They are interconnected with SCD.



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Kinds of tasks (3):

➤ **C&E (Cause & Effects) Charts**

C&E charts are used to identify causes that can lead to critical effects on system. Usually these documents are required for ESD and also may be developed for PSD (optional).

➤ **Instrument Datasheets**

Instrument datasheets are part of procurement package. They are used to provide equipment specifications important for control system. They are developed according to applicable normative documents, i.e. NORSOK I-001, Rev. 3.

➤ **Wireless Evaluation**

Possible usage of wireless transmitters is analysed. The most popular wireless protocol, WirelessHART, is approved in IEC 62591.

➤ **PFD (Probability of Failure on Demand) Calculation**

PFD should be calculated for each loop that is classified as SIL (Safety Integrity Level). Calculations are performed according to EN 61508.

➤ **Participation in HAZOP activities**

HAZOP is a structured and systematic examination of a planned or existing process or operation in order to identify and evaluate problems that may represent risks to personnel or equipment, or prevent efficient operation.



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Why Kharkov, Ukraine?

“Ukraine’s well-educated, highly-skilled workforce and low labor costs provide an ideal environment for businesses to prosper”.

*Silviu Popovici, General Manager of Coca-Cola Beverages,
Ukraine.*

Kharkov as an IT and engineering Hub



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Overview of Economy

- *Ukraine is an emerging free market, with a gross domestic product that has experienced rapid growth in recent years*
- *Western-oriented government policies encourage partnership and close business ties with US and EU companies*
- *In 2008 Ukraine joined the World Trade Organization*
- *Ukraine now has the potential to be one of the region's leaders in volume of foreign direct investment and portfolio investment*
- *In 2007 Ukraine had the highest IT and engineering industry growth rate among Central and Eastern European countries. Ukrainian IT and engineering market ranked fourth after Russia, Poland and the Czech Republic, with almost 40 percent growth and over \$3,4 billion in volume, accordingly to IDC survey*
- *The USA, Germany, Poland, the UK, Japan, China, Russia are the main trade partners of Ukraine*



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Education

- 3d most significant scientific & educational hubs in USSR
- Largest scientific & cultural centre in Ukraine
 - 60 Research Institutes
 - 45 Higher Degree Institutions
 - ≈150, 000 students annually
- Known worldwide for work in machinery
 - aerospace, nuclear electronics, boilers, turbines (arms, etc.)
- 4 major Ukrainian Technical Universities
- ≈ 3,000 IT graduates annually



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Where is Kharkov?

Eastern Ukraine

Getting here:

1. Direct flight from Vienna (< 2h)
 - 1 daily flight (except Tue)
2. Direct flight from Zurich (< 2h)
 - 1 daily flight
3. Direct flight from Kiev (< 1h)
 - 4 daily flights
4. Train from Kiev (\approx 6–8h)
 - 4 daily trains



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What we suggest for you using our previous experience in step by step manner:

- 1. Select a new talented employees oriented on various directions in accordance with Aker's requests;***
- 2. Define basic direction and projects for local and remote work for Khartep's engineers in accordance with their CV and skills;***
- 3. Consider opportunities to involve new suggested engineers in working on projects;***
- 4. Create Aker Solutions engineering hub to meet the increasing demand in a growing market, both in Norway and especially internationally with high qualified competitive staff;***
- 5. Build up capacity of engineering hub in Ukraine due to expanding of existing directions and creating a new opportunities to resolve a new tasks using of high Kharkov region's scientific and educational potential.***



Thank you for your attention!

Contacts:

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