

Enhancing transparency in construction company combined construction and information technology



Best Partner & First Company with credibility and integrity
by maximizing the value of space through Creative Solution

2008. 10. 31

Chan Jeong, Park

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1. Video clip for TPMS

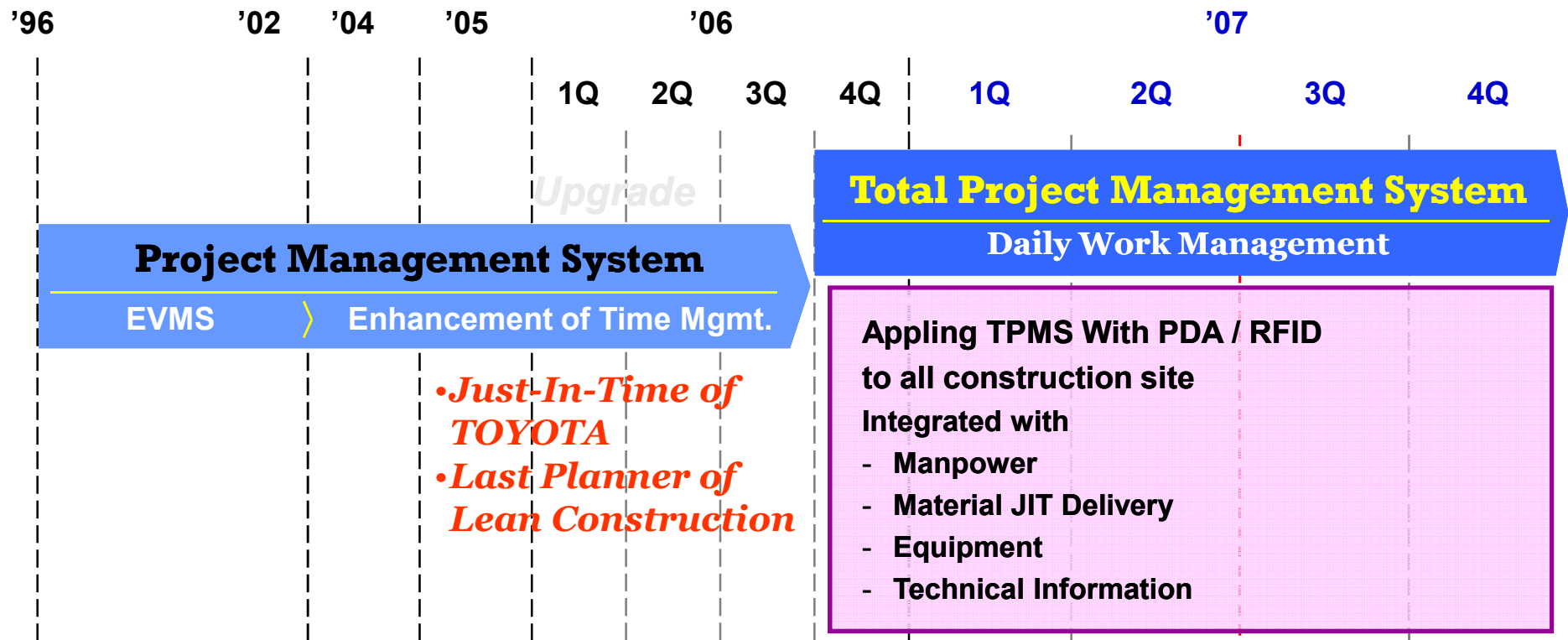
Using EVMS, TPMS is an ERP that manages construction schedule and profit/loss, which is in turn linked to the sales, engineering, material and human resource systems.



2. TPMS Development History

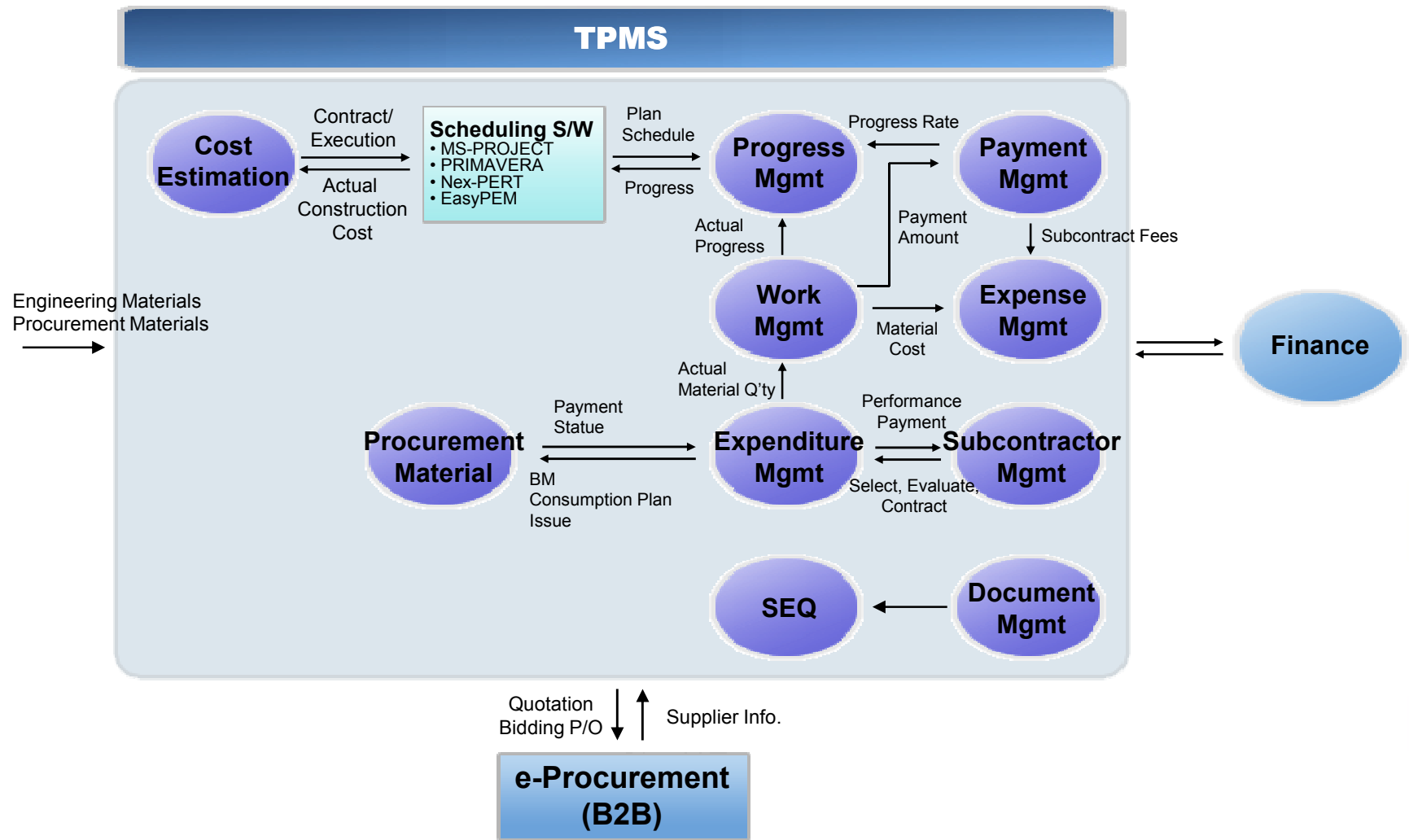
GS Engineering and Construction (E&C) Corp.

- since 1996, has utilized the *Project Management System (PMS)*, which is based on the *Earned Value Management System (EVMS)*.
- created the *Total Project Management System (TPMS)* that combines the concepts of *JIT* and *Lean Construction* in 2006.



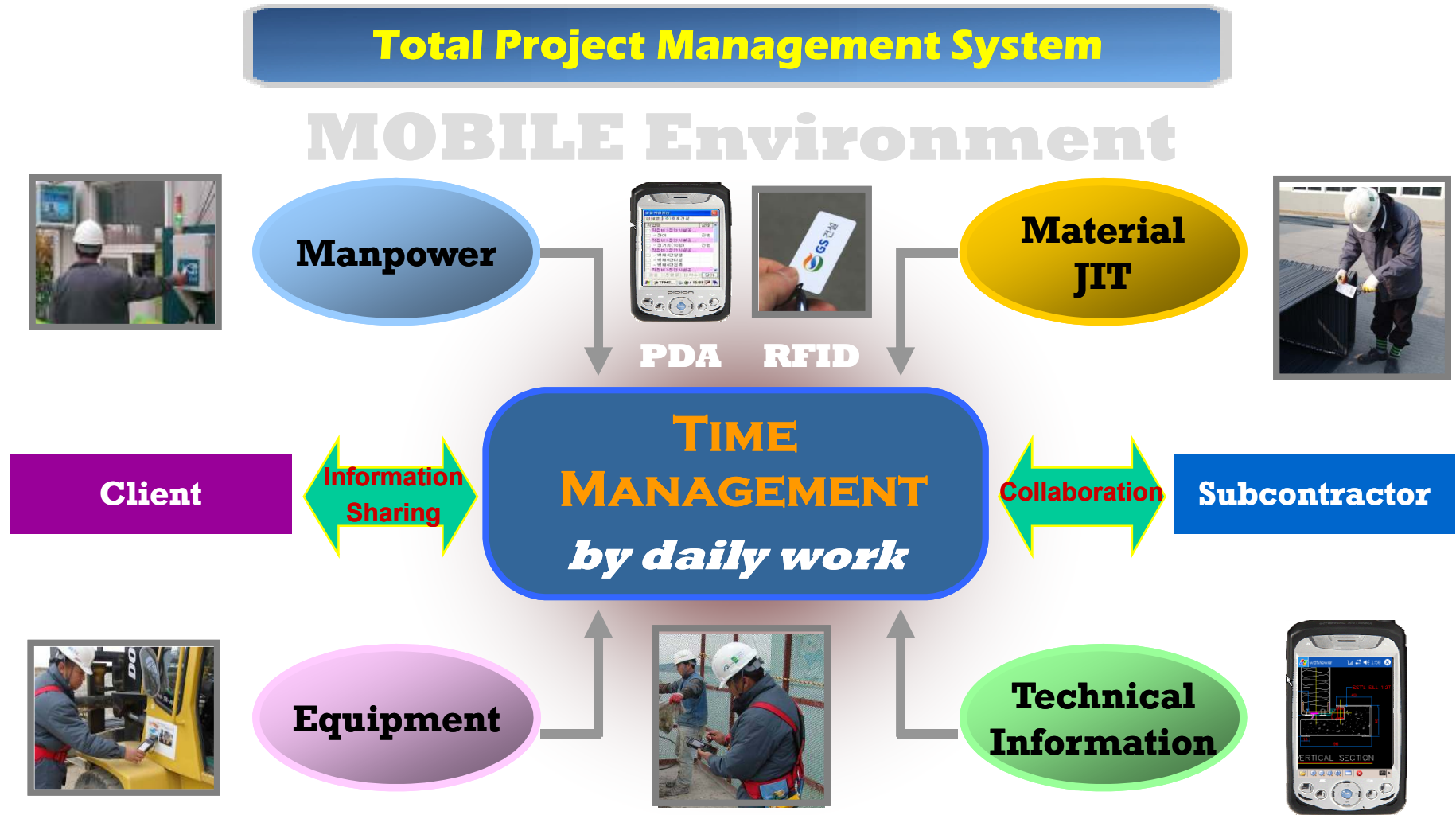
3. TPMS Functions

Using EVMS, TPMS is an ERP that manages construction schedule and profit/loss, which is in turn linked to the sales, engineering, material and human resource systems.

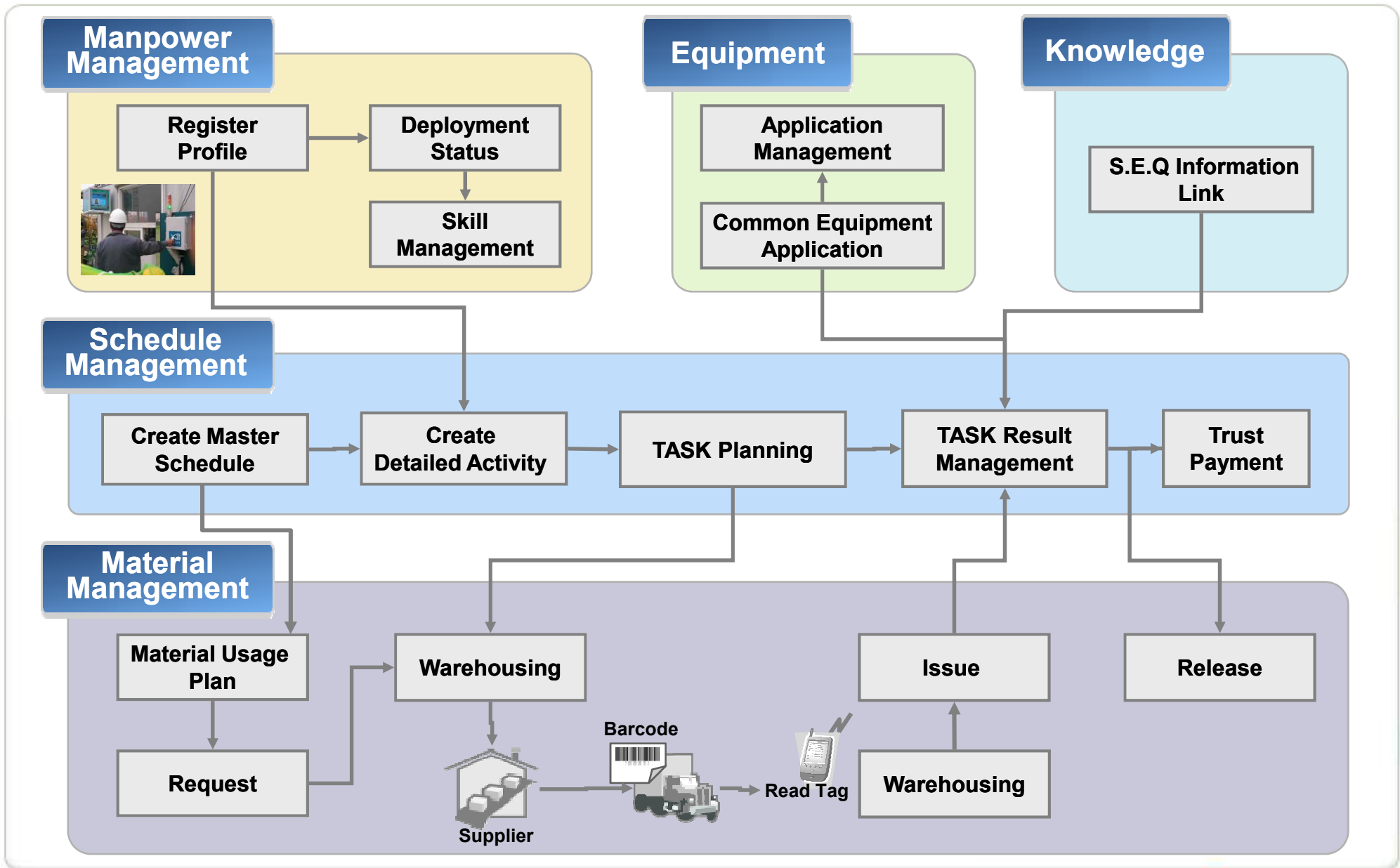


4. Outline of TPMS

TPMS enables to manage *manpower, material, and equipment* related to the activities on a daily basis, and facilitate real-time *sharing of information* by mobile technology like *Personal Digital Assistants (PDA)*



5. System flow in TPMS



Construction types have been categorized in order to manage the works with the subcontractors.

Construction Type(23Types)

Daily Task Meeting (for subcontractors)

- Architecture**
 - Officetel
 - Hospital
 - Factory
 - Cultural Facilities
 - Hotel
- Housing**
 - Apartment
 - Officetel
- Civil**
 - Roads
 - Subways
 - Industrial Area
 - Ports
 - Railways
 - Dams
- Plant**
 - Refineries/Petrochemical
 - Nuclear Powerplants
 - Coal-fired Powerplants
 - Combined Powerplants
 - Storage Tanks
- Environment**
 - Sewage Facilities
 - Wastewater Treat.
 - Recycling
 - Pipeline



6. TPMS main menu

Daily work meeting

The daily progress amount of a subcontractor is automatically calculated according to the completion of the daily work they performed.

Bid Category		Subcontractor				
Base Month	2008-02-29	Subcon.	1010-16 INSULTEC INTERNATI			
		<input checked="" type="radio"/> All <input type="radio"/> Guesstimate				
		<input checked="" type="radio"/> THB <input type="radio"/> WON				
		Retrieve Save Download				
Bid Category	Contract Amount	Date	Daily Earned	This Month	To-Date	Memo
OPEN Misc.	66,800,000.00	2008-02-01	69,715.86	69,715.86	44,314,725.93	
		2008-02-02	862,768.05	932,483.91	45,177,493.98	
		2008-02-03	0.00	932,483.91	45,177,493.98	
		2008-02-04	610,701.14	1,543,185.05	45,788,195.12	
		2008-02-05	182,274.53	1,725,459.58	45,970,469.65	
		2008-02-06	164,359.54	1,889,819.12	46,134,829.19	
		2008-02-07	141,464.64	2,031,283.76	46,276,293.83	
		2008-02-08	133,037.47	2,164,321.23	46,409,331.30	
		2008-02-09	139,107.36	2,303,428.59	46,548,438.66	
		2008-02-10	0.00	2,303,428.59	46,548,438.66	
		2008-02-11	0.00	2,303,428.59	46,548,438.66	
		2008-02-12	235,519.02	2,538,947.61	46,783,957.68	
		2008-02-13	210,090.20	2,749,037.81	46,994,047.88	
		2008-02-14	146,591.61	2,895,629.42	47,140,639.49	
		2008-02-15	178,149.40	3,073,778.82	47,318,788.89	
		2008-02-16	158,937.86	3,232,716.68	47,477,726.75	
		2008-02-17	120,550.25	3,353,266.93	47,598,277.00	
		2008-02-18	1,069,308.48	4,422,575.41	48,667,585.48	
		2008-02-19	417,232.36	4,839,807.77	49,084,817.84	
		2008-02-20	525,821.89	5,365,629.66	49,610,639.73	
		2008-02-21	58,047.39	5,423,677.05	49,668,687.12	
		2008-02-22	446,922.62	5,870,599.67	50,115,609.74	
		2008-02-23	127,645.21	5,998,244.88	50,243,254.95	
		2008-02-24	0.00	5,998,244.88	50,243,254.95	
		2008-02-25	110,083.73	6,108,328.61	50,353,338.68	
		2008-02-26	1,080,940.56	7,189,269.17	51,434,279.24	
		2008-02-27	7,256,696.51	14,445,965.68	58,690,975.75	
		2008-02-28	1,655,693.07	16,101,658.75	60,346,668.82	
		2008-02-29	5,226,759.11	21,328,417.86	65,573,427.93	

using RFID , we can monitor the mobilization status of manpower in real time.

Past



RFID



출역인원 조회

인원정보 조회
 ▶ SBG for GS - 플랜트 총 117명 / 출역일 : 2008-03-03

전체

이름	직종	출근	퇴근
Ae	Carpenters	06:37:46	00:00:00
Amcar D.	Carpenters	06:29:02	00:00:00
Aorrawan Th.	Carpenters	06:28:41	00:00:00
Ardun T.	Carpenters	06:48:05	00:00:00
Arnan K.	Rebar Worker	06:41:31	00:00:00
Arnupong O.	Carpenters	06:27:10	00:00:00
Audai T.	Carpenters	06:53:23	00:00:00
Azoo	Common Labor	06:39:06	00:00:00
Bancha S.	Foreman	07:38:54	00:00:00
Boonjan P.	Carpenters	07:25:54	00:00:00
Boonmee J.	Masonry Worker	06:37:27	00:00:00
Boonpen P.	Masonry Worker	06:34:43	00:00:00
Brunh K.	Carpenters	06:47:49	00:00:00
Chainarong P.	Foreman	07:06:34	00:00:00
Chan K.	Carpenters	06:45:14	00:00:00
Chantha C.	Carpenters	06:40:56	00:00:00

닫기

- RFID : Radio Frequency Identification
- PDA : Personal Digital Assistants

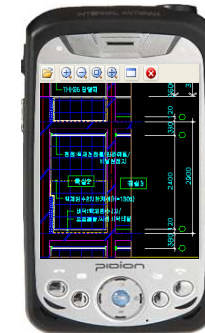
Real Time Work Management

Information for daily work management, safety, material, and SEQ can be viewed and processed enabling efficient use of resources. Construction time is reduced and the quality of the products are increased.



Easy document viewing

Documents which are carried by site workers can be viewed via PDA which enables easy and rapid viewing of parts of interest enabling accurate construction.



Sharing of safety information

Photos of dangerous locations and locations requiring fix-up can be taken via the PDA and shared with the subcontractors. This results in the prevention of safety accidents and increase quality.



7. Expected Benefits

TPMS has increased efficiency and productivity, which has resulted in cost efficiency and increased productivity of the subcontractors. It has enabled transparent management and increased the competitiveness in this highly competitive construction industry.

TPMS Benefits

1. Sharing information

- Today's work status, tomorrow's work plan, manpower present, material and equipment in real-time
- Increased collaboration with the subcontractors

2. Transparency in management

- If the Task's completion is fixed during a Daily Task Meeting, the payment is automatically calculated
- Additionally, the construction progress status, revenue, and profit/loss in real-time

3. Accurate schedule planning

- Planning confidence rate can be increased to 90% from the current 60%

4. Preventing the safety accident

- SEQ and technical information is linked with the Task

Ultimate Goal

**Efficiency
Productivity
Transparency
Competitiveness**