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# ENHANCEMENT SUPPORT

## Case Study

**Domain: Imaging Technology**

**Type: Enhancement Support**

*"Software for Optical microscopes that identifies the inclusions in material (steel) and grade them according to available standards"*

## B.A.T. to provide enhancement support for metallographic imaging software after it was released to the market

**The imaging software was released by a leading global innovator, manufacturer and supplier of high precision optical solutions. The support activity involved adding new functions & enhancement to the existing functions through out the operational life of this software.**

| | |
|---|---|
| **Challenge** | • **"Short Response Time"** to client's each customer's unique requirements and delivering comprehensive solutions.<br>• To capture the knowledge of existing software for Optical microscopes and its code base to provide quick and accurate support |
| **Solution** | • An **Onsite-Offshore model** was opted i.e. B.A.T. matched the geographical timing with the client for effective and timely delivery.<br>• B.A.T. developed detailed traceability matrix for faster response time which traced the features to method within the code and analyzed the impact of a change as well as to estimate the time for modification. |

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## Assessing The Solution:

The client is a leading global innovator, manufacturer and supplier of high precision optical solutions based on microscopes and related instruments. The client also offers advanced software and Imaging solutions supporting a wide range of applications in the field of optical microscopy.

B.A.T. assiduously assessed the client's requirements of **"Enhancement Support"** of software that identifies the inclusions in material (steel) and grades them according to available standards. The scope of services for B.A.T. was defined for this project to:

1. **Development of additional programs, features and or interfacing in the existing software.**
2. **Change Requests**
3. **Enhancements**

The service deliverable includes modification and changes in the software arising with the request for software enhancements.

The customer being a leading global name in the field of high precision optical solutions based on microscopes and related instruments, B.A.T. had to ensure that robustness and quality of the development adhering their existing stringent standards.

## Traceability Matrix:

For faster response time, B.A.T. has developed a **detailed traceability matrix**.

- It traces the features to methods within the code.
- Gives the number of lines of code per method and complexity of the method.
- The traceability matrix used to analyze the impact of a change as well as to estimate the time for modification.

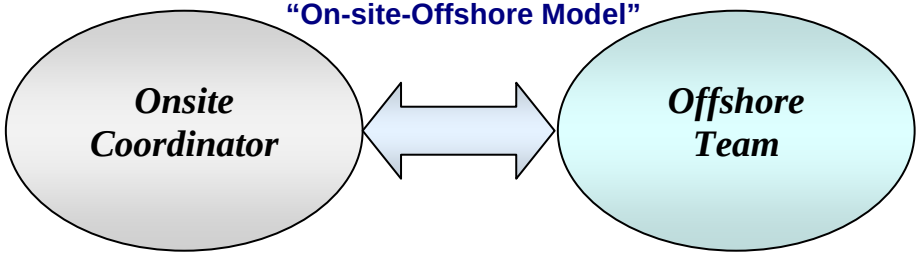
## Delivering The Solution:

Client approached B.A.T. for assistance. B.A.T. team assessed the exact requirement of the client and decided to follow **"On-site Offshore Model"** for faster response and resolving successfully all the issues of client's customers in the current imaging software for high precision optical instruments.

The client looked forward B.A.T. as a competent organization having skills in the area of image processing allied with metallurgy, to carry out their enhancement activities. B.A.T. deliverables included providing extensive solutions for the unique requirements of the client's customers through out the operational life of the software.

Correct understanding of application, core software and end-user perspective plays vital role in providing accurate solutions, thus helps B.A.T. to handle entire process very smoothly and professionally which is well appreciated by the client.

**"On-site-Offshore Model"**




- End Customer Coordination
- Issue tracking
- Prioritizing

- Coordinate
- Monitoring actions on reported issues

## Enhanced Testing:

For accurate response and flawless delivery, B.A.T. ensured enhanced testing with:

- Functional Test Suites, which covered complete scope of the application.
- Automated test scripts

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## Methodology:

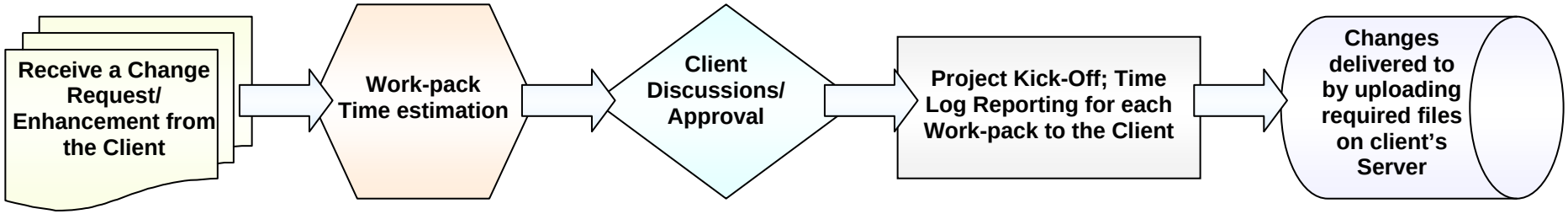
**Enhancement/ Change Request received**- The enhancement and change request received from the client. One or more Enhancements/ Change Requests are defined as a "Work-pack". Subsequently implementation document is prepared for each work-pack where the scope is properly defined or in case of change request a proper change note is made.

**Work-pack time estimation** - Proper estimation of time is done that is required for the completion of work-packs.

**Client Discussion/ Approval**- The estimates are further discussed with the client. Depending on the discussion the scope of the enhancement may be amended.

**Project Kick-Off**- Once the estimate is agreed and approved by the client the work for the enhancement begins. Several Functional Test Suites and Automated test scripts are used to test the enhancement code. A detailed Time Log Reporting is performed for each Work-pack to the Client.

**Delivering the changes**- Finally, the changes made are delivered to Service Administrator by uploading the required files on the central server.




## Testing Process:

Sources passed for upload
↑
Validation of Defect once fixed
↑
Reporting of Defect found
↑
Test cases are designed/ selected
↑
Impact is analyzed and test strategy is defined
↑
Defining exit criteria

## Key Technologies:

- Platform: Microsoft .Net
- Environment: VS 2003
- Language: C#.Net
- Rational Tools– Requisite Pro, XDE, Purify-Plus, Robot, Clear Quest and Clear Case
- Perforce

## Benefits:

- The client fulfilled their commitment to the customer without any major management and resource overheads.
- B.A.T. capability to enhance as well as to add more functionality to the current software reduced enhancement cost for the client.
- The client had access to diverse skills under one roof– B.A.T.
- B.A.T. worked as an extended arm to the client, which helped client to concentrate on Core Tasks.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