Requirements Document

Boat Maker ERP

New Spaghetti Factory (Group 3)

9/20/2018

[1 Introduction](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.x4gxkvdo2tze)        [3](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.x4gxkvdo2tze)

[1.1 Purpose](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.lcsbp7sxuu)        [3](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.lcsbp7sxuu)

[1.2 Project Scope](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.7gt6tc64la74)        [3](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.7gt6tc64la74)

[1.3 Glossary of Terms](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.punt98j2js0m)        [3](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.punt98j2js0m)

[1.4 References](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6ctv9tdsh2xe)        [4](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6ctv9tdsh2xe)

[1.5 Overview](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.c2zwu11uhxc2)        [5](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.c2zwu11uhxc2)

[2 Overall Description](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.yctumbxfjtbt)        [5](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.yctumbxfjtbt)

[2.1 Product Perspective](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.rkpqbaj8zx33)        [5](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.rkpqbaj8zx33)

[2.2 Product Features](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.o07e2nm6du6h)        [5](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.o07e2nm6du6h)

[2.3 User Classes and Characteristics](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.g4d0j55jllmp)        [5](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.g4d0j55jllmp)

[2.4 Operating Environment](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6po01elme60h)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6po01elme60h)

[2.5 Design and Implementation Constraints](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.w72ihc76sboy)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.w72ihc76sboy)

[2.6 Assumptions and dependencies](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.iiuaqpzhq72e)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.iiuaqpzhq72e)

[3 System Features](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.fl1wy81lls3p)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.fl1wy81lls3p)

[3.1 Data Access/Organization](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.8v1i67li3atu)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.8v1i67li3atu)

[3.1.1 Description and Priority](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.l3yyr9lbdps5)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.l3yyr9lbdps5)

[3.1.2 Functional Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.mjzjfai9iugx)        [6](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.mjzjfai9iugx)

[3.2 Automated Document Generation](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9zhmfew6xe42)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9zhmfew6xe42)

[3.2.1 Description and Priority](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.xoqmxacaldcg)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.xoqmxacaldcg)

[3.2.2 Functional Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.dl7hxkez9om)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.dl7hxkez9om)

[3.3 Log-In/Out](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.fpidt48uvr5b)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.fpidt48uvr5b)

[3.3.1 Description and Priority](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.494cduaf21le)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.494cduaf21le)

[3.3.2 Functional Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.kcpd5162a60k)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.kcpd5162a60k)

[3.4 Employee profile management](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6o9344dqsxma)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.6o9344dqsxma)

[3.4.1 Description and Priority](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.vv8481r53tad)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.vv8481r53tad)

[3.4.2 Functional Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.ct0wdgoiqx3j)        [7](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.ct0wdgoiqx3j)

[3.5.1 Description and Priority](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.8fs4psvhmkqk)        [8](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.8fs4psvhmkqk)

[3.5.2 Functional Requirements: Users with permission should be able to upload the following types of files to the system (each file should be no larger than 25MB):](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.obvlm5pxd7m4)        [8](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.obvlm5pxd7m4)

[4 External Interface Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.7nc1tdxnr4af)        [8](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.7nc1tdxnr4af)

[4.1 User Interfaces](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9o23nm1z820v)        [8](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9o23nm1z820v)

[4.3 Software Interfaces](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.mz6sdvbu8f75)        [9](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.mz6sdvbu8f75)

[5 Other Non Functional Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.rrvleoisiugs)        [9](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.rrvleoisiugs)

[5.1 Performance Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.bcw2nuywhxc1)        [9](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.bcw2nuywhxc1)

[5.2 Safety Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.jy6plx4wyuhb)        [10](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.jy6plx4wyuhb)

[5.3 Security Requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.m5dc8x5qp41l)        [10](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.m5dc8x5qp41l)

[5.4 Software Quality Attributes](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.eeztifv8krex)        [10](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.eeztifv8krex)

[6.0 Other requirements](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9d4tbux4k5ur)        [11](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.9d4tbux4k5ur)

[Appendix: Issues List](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.qly8wg8bvlla)        [11](https://docs.google.com/document/d/e/2PACX-1vTealMJDYwkU_0P8L8B3Bsy_7DwPeQzv88okd3SG8Wcwa-GYF8kbne_aLN5u4lmSFJoIHFqm1VUzuJ_/pub?embedded=true#h.qly8wg8bvlla)

## Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Date | Reason for Changes | Version |
| Initial draft | 28/09/2018 |  | 1 |
| Release candidate 1 | 2/10/2018 | Update for release to client | 2 |
|  |  |  |  |

## 1 Introduction

### 1.1 Purpose

The new system is an ERP system it will be used to track and manage orders,inventory and man-hours along with other forms.This system seeks to reduce administrative work while increasing estimated cost accuracy. This RD will describe the new system as whole singular ERP system, going into depth with the system features, external interface requirements, and other non functional requirements.

### 1.2 Project Scope

The software will be used to manage every stage of product manufacturing, the goal of the new software will be to increase efficiency between every manufacturing step while decreasing cost spent completing trivial tasks such as data entry. The new software also aims to increase overall cost accuracy for management with an improved system to monitor input costs such as labour time, materials, and other various inputs for manufacturing.

### 1.3 Glossary of Terms

|  |  |
| --- | --- |
| RHID | Rigid Hull Inflatable Boat |
| ERP | Short for “Enterprise Resource Planning”. Software for a business to help the company manage resources such as raw materials, labour, designs, etc. |
| True Cost | The cost of products before markup. |
| RD | Requirements Document |
| Failover | switching to a [redundant](https://www.google.com/url?q=https://en.wikipedia.org/wiki/Redundancy_(engineering)&sa=D&ust=1538530256446000) or standby [computer](https://www.google.com/url?q=https://en.wikipedia.org/wiki/Computer&sa=D&ust=1538530256446000) [server](https://www.google.com/url?q=https://en.wikipedia.org/wiki/Server_(computing)&sa=D&ust=1538530256446000), [system](https://www.google.com/url?q=https://en.wikipedia.org/wiki/System&sa=D&ust=1538530256447000), hardware component or network upon the failure or [abnormal termination](https://www.google.com/url?q=https://en.wikipedia.org/wiki/Abnormal_end&sa=D&ust=1538530256447000) of the previously active [application](https://www.google.com/url?q=https://en.wikipedia.org/wiki/Application_software&sa=D&ust=1538530256447000), server, system, hardware component, or network. |
| MUST | This word, or the terms "REQUIRED" or "SHALL", mean that definition is an absolute requirement of the specification.  BCP 14 [https://tools.ietf.org/html/bcp14] |
| MUST NOT | This phrase, or the phrase "SHALL NOT", mean that the definition is an absolute prohibition of the specification.  BCP 14 [https://tools.ietf.org/html/bcp14] |
| SHOULD | This word, or the adjective "RECOMMENDED", mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.  BCP 14 [https://tools.ietf.org/html/bcp14] |
| SHOULD NOT | This phrase, or the phrase "NOT RECOMMENDED" mean that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.  BCP 14 [https://tools.ietf.org/html/bcp14] |
| MAY | This word, or the adjective "OPTIONAL", mean that an item is truly optional.  One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.)  BCP 14 [https://tools.ietf.org/html/bcp14] |

### 1.4 References

[1]        Speedy Boats. (2018). [online] Available at: https://speedyboats.wordpress.com/

[Accessed 19 Sep. 2018].

[2]        Bradner, S. (1997). *Key words for use in RFCs to Indicate Requirement Levels*.

[online] Best Current Practice. Available at: https://tools.ietf.org/html/bcp14 [Accessed

20 Sep. 2018].

### 1.5 Overview

This RD will contain an overview of the system features, the functionality that those various features have to enhance workflow and productivity; external interface requirements, the user interaction with the system and software; and other non functional requirements, these being safety, performance, quality and security requirements.

## 2 Overall Description

### 2.1 Product Perspective

The solution will be a new, self-contained product to replace the current system as it costs too much money to continue using. The new software will be used for every step in the manufacturing of the product. As the current system for the client is inefficient and has a costly subscription, the new system aims to eliminate the inefficient use of software which ultimately will increase work efficiency amongst all departments.

### 2.2 Product Features

System features will include data entry and retrieval completed in a matter of seconds thus increasing clients time to spend on more important steps of the manufacturing process. Flexible data fields will be integrated into the system as to accommodate the vast variety of input needed for manufacturing, duplicate information will be automatically applied to the relevant data fields to reduce data entry repetition. High security of sensitive secured information such as client and employee profile, access to modify these profiles must require the user class to have high-level security clearance. The interface must be intuitive and reduce redundancy while completing tasks. The system will support a large group of users without compromising the performance of the system.

### 2.3 User Classes and Characteristics

The various user classes were identified as bookkeepers, management, sales, engineering, and purchasing. Each class of user has different levels of abstraction and security clearance; documents that the user class uploads; and interface that the user class interacts with.

The bookkeeping user class maintains records of financial transactions by establishing accounts; posting transactions; ensures legal requirements compliance. Bookkeepers must have access to input and retrieve data pertaining information about all prior product sales, input costs for accounting and tax auditing purposes.

Management must have access to all aspects of the software to monitor and facilitate each department. Management will act as the administrator and have the authority to view and edit all employee profiles, as well as have access to all data entry throughout every department.

Sales user class will have the ability to create financial quotes for customers, access all previous records of product sales, and have information about manufacturing input costs. Input and retrieval times must be less than one second as input and retrieval is performed all throughout the work day.

Engineering must have access to upload, search, and view documents in a categorized database of files all pertaining to construction of the product. As an engineer user class you will have access to all data entry, product pricing, part materials information, etc that are associated with manufacturing the finished product.

Finally, the purchasing user class must have access to create purchase orders and supplier quotes. All purchase orders should be created efficiently with all the important information about manufacturers prices, products and contact information easily accessible while in the process of completing a purchase order. With the process order completed, a supplier quote must be creating with ease.

### 2.4 Operating Environment

The ERP system will be be operated on terminals on site running Windows 7 and newer, each user must login using a username and password in order to access their user class within the system. The system should be designed independently of any platform, it must however operate on the systems currently installed on the clients worksite.

### 2.5 Design and Implementation Constraints

All user classes require the same pieces of data information to be presented in different formats and have the relevant information for their role in the company readily available. Much of the information that the client interacts with on a daily basis is sensitive thus security is important as never losing the data therefore regular backup is required.

### 2.6 Assumptions and dependencies

One of the assumptions is that when scanning the barcode of a material to enter into the database that the information it provides satisfies the required pieces of information need to update or create that particular item in the database. To reduce cost the client may decide to host the system locally, thus must have the infrastructure in place to host successfully, and have the ability to add any hardware that is required..

## 3 System Features

### 3.1 Data Access/Organization

#### 3.1.1 Description and Priority

Users of the software will often need to access files in a quick and efficient manner that does not hinder their productivity. This functionality will be given a *high* priority.

#### 3.1.2 Functional Requirements

1-SEARCH: Search functionality to access the following information:

Purchase Records

Parts/Materials Companies

Parts/Materials Pricing and Availability for each Company

Engineering Documents

Management Documents

2-STORAGE: Files must be stored in an organized fashion that:

Allows for easy access through a file system; and

Can be discovered through a search query.

3-BACKUP: A backup storage system must be in place to allow access to previous versions of documents, as well as restore the system in the event the main storage system encounters errors. This backup system:

SHOULD be placed offsite, in case of physical threats that could damage both systems; and

MUST be updated at least once every 5 hours.

### 3.2 Automated Document Generation

#### 3.2.1 Description and Priority

The software will need to automate document creation process, and autofill duplicate contents without relying on additional user input.This functionality will be given *high* priority.

#### 3.2.2 Functional Requirements

1- AUTOFILL: Software MUST be able to autofill duplicate contents:

Including addresses, contact information etc. when users accomplishing data entry, invoicing, creating purchases orders and creating after action report of projects.

### 3.3 Log-In/Out

#### 3.3.1 Description and Priority

Users of the software will need to log in and out of their respective accounts. A secure system that monitors work-time must be used to enter and exit the software. This functionality will be given *medium* priority.

#### 3.3.2 Functional Requirements

1-LOGIN: Users MUST be able to log in and out of their accounts:

Through a secure process that MUST NOT compromise the privacy of their account and login information; and

So that they can access the features designated for their user class.

### 3.4 Employee profile management

#### 3.4.1 Description and Priority

Managers MUST be able to edit and manage employee profiles, and set different access and operating permissions.This functionality will be given *high* priority.

#### 3.4.2 Functional Requirements

1- MANAGE EMPLOYEE PROFILES: Managers MUST be able to act as a high level administrator and be able to manage employee profiles including:

Create new profile

Edit existing profile

Remove profile

2- CUSTOM MEMBERSHIP PERMISSIONS: Managers MUST be able to assign custom memberships and set different access permissions for members including:

Financial information access and modify permission

Purchase information access and modify permission

Material costs access and modify permission

Engineering profiles (Frame instructure, drawings etc.) access and modify permission

Manufacturers information access and modify permission

TBD

3.5 Files upload

#### 3.5.1 Description and Priority

Users of this software will need to be able to upload files to the system.This functionality will be given *high* priority.

#### 3.5.2 Functional Requirements: **Users with permission should be able to upload the following types of files to the system (each file should be no larger than 25MB):**

Files

Photos

Audio files

Video files

TBD

## 4 External Interface Requirements

### 4.1 User Interfaces

Employees must be able to find menu items without looking through nested dropdowns or hidden buttons - the interface MUST be accessible and intuitive to use.

User interface MUST reduce amount of manually entered data.

Employees must have the option to avoid starting from a blank order, document, or spreadsheet when similar work already exists and can be copied from.

Data MUST be searchable to find inventory, work orders, and previous tasks.

4.2 Hardware Interfaces

Along with the expected keyboard-based text input, the ERP also MUST support barcode scanners and cameras. Barcodes also act as a form of checkpoint to mark when work is completed. Employees scan the barcode to signal the ERP to mark tasks as done.

### 4.3 Software Interfaces

Data redundancy is important to data-driven businesses such as SpeedyBoats. Offsite backups are not currently implemented. Their design is outside the scope of this document, but, however, the ERP MUST support exporting the data into a common data format that can be restored later.

Inventory is imported from external suppliers, and the ERP SHOULD support multiple common data formats for importing information in bulk. Further reducing the time spent adding data into the ERP.

The interface MUST be accessible on Windows 7 and newer. Support SHOULD be provided for other operating systems.

4.4 Communications Interfaces

Employees communicate over email. The ERP MUST be able to export information, pictures, and data sheets to email in an intuitive way.

The ERP does not need to connect to the internet, and SHOULD be available only to locally connected employees. This greatly reduces the possibility of unauthorized access attempts.

Furthermore, the ERP SHOULD NOT require cloud infrastructure. SpeedyBoats is a smaller team which may opt to reduce costs by hosting locally.

## 5 Other Non Functional Requirements

### 5.1 Performance Requirements

The system MUST support up to 50 concurrent connections without noticeable performance decrease. The company currently employs 25 employees that will need access to the ERP but is looking to grow. Supporting double the amount of users without the need for changes would provide a good buffer.

The access time for forms stored in the database SHOULD be less than 1 second. The actions that will be performed the most need to be as fast as possible to keep efficiency high and frustration low.

Database queries SHOULD return the first result within 3 seconds.The user is often looking for one of the first results so having it appear quickly helps efficiency.

New employee profiles SHOULD be useable within 1 hour of creation. A new employee having to wait a significant amount of time for their profile to come online would cause unnecessary slowdown.

        Permission changes SHOULD take effect within 1 minute of being assigned. Pending permission changes would create workflow stalls otherwise.

        Document autofill SHOULD be instantaneous. This is a key feature for the efficiency of the system and needs to be as fast as possible.

### 5.2 Safety Requirements

The system MUST interface with Speedy Boats current backup System, to prevent loss of business data.

The system MUST use an auto-save function so if something occurs mid-order the form can be recovered.

The system SHOULD employ type checking to prevent the wrong type of data being entered into form fields. If a form was used in a workflow it would cause a propagation of serious errors.

The system MUST backup to an off-site server every 5 hours.

The system MUST store every backup as a unique file.

### 5.3 Security Requirements

Only users with the Engineer roles are able to view and edit part diagrams.

Users MUST login using a username and a password.

Users SHOULD be able access the database from off-site by using a VPN.

The data stored in the database MUST be encrypted using at least AES-256 encryption.

Only users with the Engineer or Manager role are able to delete files.

Only users with the Manager role are able to edit profiles.

Only users with the  Manager and Purchaser role are able to see the true cost of inventory.

### 5.4 Software Quality Attributes

The system MUST be must be scalable with only hardware changes.

The system MUST be able to failover in less than 1 hour.

The system MUST be able to be upgraded to a newer version in less than 6 hours.

## 6.0 Other requirements

New users must be able to obtain basic proficiency with less than 4 hours of training. Basic proficiency means that the users knows how to complete all the tasks that arise from common use of the software but may need assistance in more advanced tasks.

The database is able to migrate to a new environment while remaining operational. It can take a long time to fully transfer a database to a new location, it would be unacceptable if the data was unavailable during this process.

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## Appendix: Issues List

Pending decisions:

Similar work often requires a calendar for scheduling. This was not discussed, and clarification is needed.

Communication was noted as being predominantly over email, however, the requirement of an improved workflow may warrant an alternative form of messaging.